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Educational News and Editorial Comment

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THE FEDERAL GOVERNMENT, EDUCATION, AND NATIONAL DEFENSE

THE depression which struck us a decade ago gave marked impetus to an unmistakable trend toward increased participation in education by the federal government. Until then the trend had been gradual. To be sure, almost from the beginning, public education in this country has received substantial aid and encouragement from the national government, but local autonomy in the support and control of schools early became deep rooted. The general public and school people alike gave their devotion to the local schools. Even during the depth of the depression, when educational services were seriously impaired throughout the nation, the schools can hardly be said to have sought the assistance which came from federal funds. These contributions of the federal government to education were designed in part to provide work relief for the army of unemployed and in part to meet the pre-employment needs of young people caught in the economic dislocations of a persistent depression. Faced with the urgent problem of providing effective measures for youth rehabilitation, the federal government turned to the schools for assistance in carrying out its program. Through substantial appropriations of federal funds and guidance from a number of governmental agencies and private commissions, the schools and the national government, working together, have achieved results with which school people are well familiar.

Educators may differ in their opinions of the values derived from, and the dangers inherent in, increased participation of the federal government in education in recent years, but one thing is certain: the experience of the past few years has stimulated a vigorous rethinking of the aims and functions of general education in this country. Current educational literature is replete with essays by individuals and reports by committees on the functions of general education in our democracy. A large portion of the discussion has centered on the problem of the extent to which the local schools should take over the functions that the federal government has performed ostensibly as emergency measures, but in almost all the discussion the more fundamental question of the aims and the functions of secondary education has been paramount.

Will the present national-defense crisis accentuate or curtail that rethinking? It is clear from current educational literature that the shift in emphasis, so far as the relation of the federal government to the schools is concerned, will be from youth rehabilitation to direct preparation of youth for national defense. At this writing, however, there is evidence that the question of what is the best education for defense will occupy the attention of school people in the months and perhaps the years immediately ahead. What is the best preparation of youth for defense? Is it work experience? A liberal education? Technical training in war industries? Training for citizenship? Moral rearmament? These and related questions promise to occupy our attention for some time.

Training for defense in local vocational schools That there will be strong demands upon the schools to prepare young people for defense industries may be concluded from several releases and articles which have recently come to the *School Review*. A release from the federal Office of Production Management indicates the demands which will be placed on the vocational schools in particular and the far-reaching effects which this program may have on secondary education.

Defense training courses will be given priority in the nation's vocational schools, according to a plan announced by Sidney Hillman, associate director general of the Office of Production Management. Under this new policy, local representatives of the United States Employment Service will recommend to

local schools the types of defense occupations for which workers will be trained, together with the number of persons to receive this training. The plan, which co-ordinates defense training for unemployed workers with specific employer needs, has been approved by John W. Studebaker, United States Commissioner of Education, and Ewan Clague, director of the Bureau of Employment Security of the Social Security Board.

Under the terms of this agreement, all training projects are to be conducted for occupations approved by the Advisory Commission to the Council of National Defense. Each state board for vocational education and each local board of education will establish and utilize a representative advisory committee, together with consultants, one of whom in each case will be a representative of the United States Employment Service. The membership of the committee is to include an equal number of representatives of labor and of industrial management. The Employment Service will make recommendations to educational authorities in each community and in each state concerning the number of workers to be trained and the occupations in which training is to be offered. All proposals for establishing defense training in particular occupations will be submitted by the proper educational executive to the advisory committee for consideration and decision. To the extent that authority for decision is given to advisory committees and subject only to veto by the regularly constituted state boards for vocational education or by local boards of education, all decisions with respect to the general arrangements for the entire program, occupations for which training will be offered, number of workers to be trained, and all related matters will be made by the respective advisory committees on state and local levels. Proposals to train for various types of defense occupations, together with estimated numbers to be trained, as recommended by the Employment Service, will be given prior claim by the advisory committees and educational authorities.

*Advocates greater stress
on vocational education*

What will be the effect of the use of secondary schools for training in war industries on the current and future purposes of American education? In an article entitled "School and Industry Unite for Defense," which appears in the journal *Occupations*, S. R. Livingstone, director of personnel of the Thompson Products, of

Cleveland, expresses the stand which will be taken by one group in the controversy. He says in part:

I do not want anyone to believe that we have even remotely approached what is eventually to be desired in the way of the most effective school-industry co-operation. I think most of us will agree generally with this broad statement—that the purpose of education is primarily and basically to equip young people with knowledge and skill by means of which they can most effectively contribute to the production of food, clothing, shelter, and the luxuries which go to make up our standard of living. While knowledge of such fields as the arts, languages, philosophy, history, and others is of importance to society, still I believe these fields are secondary, at least at this time, to the production of the material necessities and luxuries, as society is now demonstrating that it cannot be happy without an abundance of the material things.

Proceeding on this theory, I now set forth the belief that our educational system should be completely overhauled and re-designed so that the product of education, our young people, will be better equipped to take their places in the productive life of the nation.

"Spiritual preparedness" Strong emphasis on specific and direct
and the national defense vocational training for national defense
is perhaps inevitable, but warnings are
being raised lest education for defense be wholly concerned with
machines and tools. In a thoughtful article appearing in *School Life*,
Commissioner John W. Studebaker, of the United States Office of
Education, although by no means opposed to vocational training,
makes a plea for "spiritual preparedness" and recommends a kind of
education which both transcends and undergirds vocational training:

In the current crisis thoughtful educators are asking what the schools can do even more effectively than in the past to contribute to the spiritual preparedness of the nation. There is almost universal agreement that the schools must be depended upon to make essential contributions. What are some of these contributions? Let me mention just a few of them.

First, the schools are giving greater emphasis to the development of a genuine understanding of our basic freedoms as these are embodied in our Constitution and its Bill of Rights. Such an understanding will require a knowledge of the long and difficult struggle which has been waged by mankind in the past and which continues today to secure or retain the fundamental human rights of freedom of speech, press, and assembly; freedom of conscience and of religion; freedom from want; freedom from fear.

Second, the schools are emphasizing the practice of democracy in and out of school by stressing the important ways in which youth can cultivate racial and religious tolerance, understanding, and co-operation in their school, home, and community relationships.

Third, the schools are affording young people needed training in organizing and presenting facts which bear upon debatable issues; in developing effective techniques of group discussion and group decision leading to group action.

Fourth, the schools are instilling a genuine respect for those qualities of character and competence which are indispensable requisites in all citizens in a democracy, whether occupying positions of public or of private trust and confidence.

Fifth, the schools are helping to deepen the conviction that our country can and will offer the possibility of an abundant life to everyone who will participate actively and honestly and co-operatively in seeking solutions to our common problems.

Sixth, the schools are developing in young people and in many adults those essential practical knowledges and skills without which democratic ideals cannot be given practical expression; and without which, at this time especially, democracy cannot be effectively defended against brute force and oppression.

Achieving ideals basic to an intelligent patriotism The kind of spiritual preparedness for which Commissioner Studebaker makes a plea may be achieved and is being achieved by the schools in a variety of ways. A sane and practical approach is advocated by Edgar Dale in the *News Letter* (published by the Bureau of Educational Research of Ohio State University) in an editorial entitled "Toward an Enlightened Patriotism." By an "enlightened patriotism" Mr. Dale means "a love of country based on knowledge, understanding, and affection." An enlightened patriot is one who "not only has an appreciation of the great men and great traditions of his country but . . . also has a responsibility for improving this country." Under six "basic ideals in the democratic pattern" Mr. Dale lists existing motion pictures which could be used to make young people intelligent about, and sensitive to, the commendable features of our democracy and to the problems which we must yet solve. A well-selected list of motion pictures appears under each of the six basic ideals.

BECOMING ACQUAINTED WITH LATIN AMERICA

THIS year Pan-American Day was celebrated in many American high schools, not so much as a novelty or as a means of promoting an interesting school project, but with a fuller realization of the meaning of Pan-Americanism in the common destiny of the

Americas. The Pan American Union, an international organization created and maintained by the twenty-one American republics, is now fifty-one years old. Its activities in promoting peace, commerce, and friendship among the twenty-one republics by "fostering economic, juridical, social, and cultural relations" have been far reaching. Except for extra-curriculum activities relating to Pan-American Day and the formation of Pan-American clubs, the secondary schools of this country have done very little directly to promote good will and understanding of our neighbors to the south. Unfortunately the typical secondary-school curriculum virtually ignores Latin America. Literature in translation from Latin-American countries is conspicuously missing from the literature curriculum, except for courses in world-literature recently introduced into some high schools. Most pupils graduate from high school with the impression that our Latin-American neighbors have produced no literature. Our history courses are heavily loaded with European history, and even courses in world-history find little space for the history of South America.

A plan for development of educational relations Announcement has come from John W. Studebaker, United States Commissioner of Education, of the details of a program adopted by the United States Office of Education for "the further development of understanding and appreciation of the other American republics." Mr. Studebaker states that about two years ago Congress made an appropriation to the Office of Education for the purpose of establishing a Division of Inter-American Educational Relations. Specialists at work in this new division have co-operated with all other divisions of the Office in developing a comprehensive program, and work has already been done on several parts of the general plan. The activities of the Office of Education will be related to the Division of Cultural Relations of the Department of State and to the Office for Co-ordination of Commercial and Cultural Relations between the American Republics. The operation of the entire program is under the supervision and guidance of a General Advisory Committee of educators and other specially qualified persons.

The program embraces the following five general divisions:
(1) "Studies and Reports Dealing with School Practices and School

Materials Related to Inter-American Studies"; (2) "Promotion of Exchange of Educational Materials with Latin America"; (3) "Preparation of Teaching Aids"; (4) "Promotion and Facilitation of Professor, Teacher, and Student Exchange"; and (5) "Studies of Educational Programs in Other American Republics."

Pan-American clubs for pupils in the high school Joshua Hochstein, long interested in the promotion of Pan-American clubs in the high schools of New York City, has prepared a valuable mimeographed bulletin on how such clubs can be organized and effectively carried on. The bulletin is published by the Committee on Inter-American Relations of the Department of Secondary Teachers of the National Education Association. Principals and teachers interested in promoting understanding and friendship between the United States and our neighbors to the south will find this publication, which is entitled "The Pan-American Club and Its Activities," a most helpful booklet.

Plan of a state university for Pan-American unity A winter "summer school" for a group of more than a hundred students from seven South American countries closed on February 28 with "graduation exercises" held by the Inter-American Institute of the University of North Carolina. After graduation the group spent nearly a month visiting universities, industrial plants, and cultural centers in the United States. This experiment, which enabled a relatively large group of students from South America to study in one of our universities, was the first of its kind ever to be held in the United States. From the *News Bulletin* of the Institute of International Education, we quote a letter addressed to Stephen Duggan, director of the institute, by representatives of the delegates from the seven participating countries.

The happy idea conceived by members of the Institute of International Education and carried out by the University of North Carolina, has, we are sure, achieved complete success in the sense of making known the cultural content of North American educational institutions, the true and real sentiment of friendship which the people of the United States have toward their brothers of the South; and, finally, has opened the wide field for new ties of unity among the Americas.

The result of this visit on the part of the students and professors of the seven Latin-American republics who have participated, will be apparent in the near future in the form of true bonds of Pan-American friendship and co-operation.

HERE AND THERE AMONG THE HIGH SCHOOLS

THE three reports presented in the following paragraphs pertain to significant pupil experiences in the schools of village, rural, and urban communities. They describe the services of National Youth Administration pupils in the restoration of a public library, a follow-up study of the graduates of the eight-grade schools of a county, and an inquiry regarding provisions for rapid learners in seventy-five very large high schools.

A public library rescued by pupil-work program For many years the public-spirited citizens of Rankin, Illinois, enjoyed the distinction of a well-managed public library which served the intellectual interests of youth and adults in the village and its surrounding agricultural area. Gradually the burdensome years of the depression reduced the available revenue for library purposes until needed books and magazines could no longer be provided and the very efficient librarian could not be paid for her services. Finally the interested citizens met to decide what disposition to make of the books, since there was no money to pay the rent. The solution of the problem is described by Roy Clark, superintendent of the Rankin schools, in the *News Letter of the Illinois School Work Council*, published by Illinois School Work Council of the National Youth Administration for Illinois. Permission was obtained from the authorities to transfer the library to the school building. Two N.Y.A. boys from the manual-arts class set up a partition in one end of the building corridor and installed the necessary shelving. Three N.Y.A. girls assisted the librarian with the work of recataloguing and installing the books. The library is kept open every afternoon with N.Y.A. student service, the women's club of Rankin assuming the sponsorship of the N.Y.A. supervisor in charge. Mr. Clark reports that the pupils participating in the project responded graciously to this opportunity for community service and that the library has again become a vital part of community life in Rankin.

A survey of eighth-grade graduates in Wisconsin Marshall Canaan, superintendent of schools in Sauk County, Wisconsin, with offices at Baraboo, sent a questionnaire to teachers of last year's eighth-grade graduates to find out what those young people were doing in the current year. Specifically, Mr. Canaan wanted to know how many of them were attending high school. He inquired also about the activities of those who were not attending high school and asked why they did not continue their school work. Full information was reported from all 122 schools in which eighth-grade pupils were graduated last year. According to these reports, 77.1 per cent of the 302 eighth-grade graduates were enrolled in high school. Of the 122 schools in the county, 115 are classified as rural schools. The percentage of graduates of these rural schools entering high schools was reported as 74.9. Comparing the boys with the girls, Mr. Canaan found that 69.5 per cent of the boys and 80.3 per cent of the girls from the rural eight-grade schools were in high school. Altogether, sixty-six graduates of these rural schools, forty boys and twenty-six girls, did not enter high school. Twenty-nine of the boys were said to be working on the farm and four working at other jobs. No specific reason was given for the fact that the remaining seven did not go to high school. Mr. Canaan suggests that most of these boys were over-age pupils in Grade VIII, although distance from home to nearest high school may have been a factor in a few cases. Of the twenty-six girl graduates not attending high schools, eighteen were working at home and five were working elsewhere. Of the thirty-nine graduates of other eight-grade schools in the county, only three did not go to high school. Mr. Canaan concludes his report with the observation that the teachers of Sauk County have "done much to interest the boys and girls in attending high school and in helping them to see the need for becoming prepared for some profession or vocation in order to earn a living and to become useful citizens in their communities."

Provisions for superior pupils in the high school High-school principals and teachers are frequently concerned because of the evidences at hand that certain mentally alert pupils in their classes are not working at the level of their ability. It is sometimes observed, moreover, that such pupils are found

among the cases of maladjustment in the high-school student body. Principals of Chicago high schools, under the direction of District Superintendent Henry Hagen, have been studying this problem during the present year. Butler Laughlin, principal of the Lindblom High School, is chairman of a subcommittee appointed to inquire about practices in other large high schools. Peter Ritzma, of the Farragut High School, and N. Samuelson, of Crane High School, are members of the committee. Mr. Laughlin favored the *School Review* with a copy of the report of their inquiry.

Questionnaires were sent to one hundred high schools, and replies were received from seventy-five schools with enrolments ranging from eleven hundred to eight thousand. The principals of these schools were asked to indicate whether special provisions are made for rapid learners by one or more of the following methods: (1) special classes; (2) enriched assignments within regular classes; (3) specialized curriculums, such as college-preparatory, etc.; and (4) any other procedures. The use of special assignments within classes was found to be the most frequent method of providing for rapid learners, forty-one schools reporting this practice. Special classes and special curriculums were reported by about the same number of schools, twenty-two and twenty-four examples, respectively. Four schools reported other devices. As would be expected, a number of these schools reported both special assignments and special curriculums, or other combinations of the specified methods. Principals were also asked whether rapid learners are permitted to carry more subjects than are included in a normal high-school program. Thirty-six principals reported that such pupils are permitted to take extra courses, although it is not the general practice to graduate these pupils in less than four years. The Chicago committee has recommended that pupils who learn more rapidly than other members of their classes be given more consideration than has been accorded them in past years but that their interest should be challenged by additional assignments in normal classes and that the time spent in high school should not be shortened by taking additional courses.

HAROLD A. ANDERSON

THE 1941 INSTITUTE FOR ADMINISTRATIVE OFFICERS
OF HIGHER INSTITUTIONS

THE annual Institute for Administrative Officers of Higher Institutions will be held on July 9, 10, and 11, 1941, in the Lounge of Judson Court of the University of Chicago. The central theme of the institute will be "New Frontiers in Collegiate Instruction."

The first session of the institute on Wednesday morning, July 9, will deal with the various objectives which determine the organization of instructional programs in American colleges and universities. The afternoon session on Wednesday will be devoted to a discussion of how the various subject-matter fields develop their particular objectives and content. At this session there will be three speakers, one dealing with the natural sciences, one with the social sciences, and one with the humanities.

The third, fourth, and fifth sessions, on Thursday morning and afternoon and on Friday morning, will deal with newer instructional procedures which are now being used by colleges. The Thursday morning session will describe certain adaptations of customary techniques, while the Thursday afternoon session will deal with the effective use of new teaching aids or media. The discussion will be concluded on Friday morning by a description of methods of organizing student activity.

The closing session of the institute on Friday afternoon will be concerned with the improvement of college teaching. Papers will be presented dealing with plans for facilitating improved instruction, the evaluation of college teaching, and a summary of trends in the attack on college instructional problems.

Final arrangements have not, at this writing, been completed with all the speakers for the program. The following persons have agreed to contribute papers: William H. Conley, dean, Wright City Junior College, Chicago, Illinois; Lloyd Allen Cook, associate professor, Department of Sociology and College of Education, Ohio State University; Edgar Dale, professor of education, Ohio State University; Carter Davidson, president, Knox College, Galesburg, Illinois; Harold E. Davis, professor of history and political science, Hiram College, Hiram, Ohio; B. Lamar Johnson, librarian and dean of instruction, Stephens College, Columbia, Missouri; T. R. McConnell, as-

sociate dean, College of Science, Literature, and the Arts, University of Minnesota; Reverend William J. McGucken, S.J., professor of education and director of the Department, St. Louis University; J. Hooper Wise, General College, University of Florida. The following members from the staff of the University of Chicago will present papers: A. J. Brumbaugh, dean of the College; Robert J. Havighurst, secretary of the Committee on Human Development and professor of education; Walter H. C. Laves, associate professor of political science; Robert Redfield, dean of the Division of the Social Sciences; Joseph J. Schwab, assistant professor of the biological sciences in the College; Arthur P. Scott, associate professor of history; Reginald J. Stephenson, assistant professor of physics; Ralph W. Tyler, professor and chairman of the Department of Education and chief examiner, Board of Examinations; Louis R. Wilson, dean of the Graduate Library School.

The University of Chicago extends to administrative officers and faculty members of all higher institutions, including universities, liberal-arts colleges, teachers' colleges, and junior colleges, a cordial invitation to attend the institute. No fee is charged for attendance at the institute. Room and board will be provided in the dormitory adjacent to the conference room from Wednesday morning, July 9, to Friday evening, July 11, for \$8.50. Reservations may be made through William J. Mather, bursar of the University of Chicago. The printed programs of the institute may be obtained from John Dale Russell, Department of Education, University of Chicago.

FOURTH ANNUAL CONFERENCE ON READING

THE Fourth Annual Conference on Reading at the University of Chicago will be held in Mandel Hall, June 25-28, inclusive. The central theme of the conference is "Adjusting the Reading Program to Individuals." The basic purpose of all the sessions is to consider the adjustments that should be made in school activities designed to promote growth both in and through reading in order that these activities will be better adapted to the needs of individuals. In an address introducing the theme of the conference, recent developments in reading will be reviewed and important factors, conditions, and issues identified that should be faced in further efforts to improve reading at all levels of general education.

Following the opening session the themes of the respective half-day sessions will be as follows: "Characteristics and Differences among Learners That Affect the Reading Program," "Administrative Provisions for Individual Differences," "Basic Techniques of Adjustment in Teaching Reading," "Basic Techniques of Adjustment in Promoting Growth through Reading in Various School Subjects," "Adjustments to Individual Differences in Developing Reading Interests and Tastes," "Nature of Adjustments in Teaching To Meet the Needs of Unusual Learning Types," and "Adjusting the School Library to the Needs of Individuals."

Approximately fifty persons of national reputation will participate in the conference. Among those addressing the general sessions are: Daniel A. Prescott, head of the Division on Child Development and Teacher Personnel, Commission on Teacher Education, American Council on Education; Donald D. Durrell, director, Educational Clinic, Boston University; Virgil E. Herrick and Hilda Taba, University of Chicago; Lou LaBrant, Ohio State University; Augusta Jameson, psychologist, Institute for Juvenile Research, Chicago, Illinois. Some of the speakers before the high-school and college sectional meetings are: Paul B. Jacobson, Robert J. Havighurst, and Robert L. McCaul, Jr., University of Chicago; Coleman R. Griffith, University of Illinois; J. W. M. Rothney, University of Wisconsin; H. H. Giles, Ohio State University; James M. McCallister, Herzl City Junior College, Chicago, Illinois; Robert J. Cadigan, Friends' Central School, Philadelphia, Pennsylvania; L. L. Jarvie, Rochester Athenaeum and Mechanics Institute; Edgar Dale, Ohio State University; Eve K. Clarke, Harrison Technical High School, Chicago.

The evening conferences are designed to give variety and added inspiration. On Wednesday evening Professor Davis Edwards will discuss "Procedures in Interpretative and Choral Reading" and will direct a recital in choral reading. On Thursday evening Charles W. Ferguson, associate editor of *Reader's Digest*, will discuss "The Reader and Current Literature." On Friday evening group conferences will be organized for persons facing similar problems, such as remedial reading in colleges or the improvement of reading in rural schools. A special feature of the program this year is the daily conference hour at 4:15 P.M., when opportunity will be provided for personal and small-group conferences with speakers of the day.

The conference is open without fee to students registered during the summer quarter. For those not registered a fee of \$5.00 will be charged for the conference period, or \$1.50 a day. Additional information or copies of the program may be procured from William S. Gray, Department of Education, University of Chicago.

CONFERENCE OF ADMINISTRATIVE OFFICERS OF
PUBLIC AND PRIVATE SCHOOLS

THE Tenth Annual Conference of Administrative Officers of Public and Private Schools will be held by the Department of Education of the University of Chicago at Judson Court, College Residence Halls for Men, during the week of July 21-25, 1941. The program in the forenoon will consist of lectures by members of the Department of Education and visiting instructors. Separate roundtable discussions for superintendents, high-school principals, and elementary-school principals will be held in the afternoon. Programs of the conference will be mailed to persons applying to William C. Reavis, Department of Education, University of Chicago.

Room and board will be provided, to the extent of the available capacity, in Judson Court for the week, Monday to Friday, for sixteen dollars. Reservations may be made through William J. Mather, bursar of the University of Chicago.

The conference is open without fee to students registered in the summer quarter and to administrative officers of public and private schools who desire to attend. The general theme of the conference, for which the complete program is given below, is "Administrative Adjustments Required by Socio-economic Change."

Monday, July 21

IMPENDING CHANGES IN EDUCATIONAL PROGRAMS

"Educational Adjustments Necessitated by Changing Ideological Concepts," Ralph W. Tyler, Professor and Chairman of the Department of Education; Chief Examiner, Board of Examinations, University of Chicago

"Adapting the Future Educational Program to Available Financial Resources," Herold C. Hunt, Superintendent of Schools, Kansas City, Missouri

"Reorganization of School Programs in Relation to the Changing Social Order," Lloyd Allen Cook, Associate Professor, Department of Sociology and College of Education, Ohio State University

Tuesday, July 22

INFLUENCES OF SOCIO-ECONOMIC CHANGE ON EDUCATIONAL PROGRAMS

"The Purpose and Scope of General Education," Aaron J. Brumbaugh, Professor of Education; Dean of the College, University of Chicago

"The Nature and Purpose of Industrial-Arts Education," Homer J. Smith, Professor of Industrial Education, University of Minnesota

"Trade and Technical Courses for Adults," Robert C. Woellner, Associate Professor of Education; Executive Secretary, Board of Vocational Guidance and Placement, University of Chicago

Wednesday, July 23

FUTURE DEVELOPMENTS IN CURRICULUM AREAS

"Harmonizing Conflicting Aims in Curriculum Development," Stephen M. Corey, Professor of Educational Psychology; Superintendent of the Laboratory Schools, University of Chicago

"Emerging Aspects of the Social-Science Curriculum," Louis Wirth, Professor of Sociology; Associate Dean of the Division of Social Sciences, University of Chicago

"The Role of Science in General Education," Robert J. Havighurst, Professor of Education; Secretary, Committee on Human Development, University of Chicago

Thursday, July 24

SELECTION AND TRAINING OF PERSONNEL FOR REORGANIZED
EDUCATIONAL PROGRAMS

"The Development of Scientific Techniques for the Selection of Personnel," Homer W. Anderson, Superintendent of Instruction, St. Louis, Missouri

"Training of Teacher Personnel," Roscoe Pulliam, President, Southern Illinois Normal University, Carbondale, Illinois

"Training of Administrative Personnel," John Guy Fowlkes, Professor of Education, University of Wisconsin

Friday, July 25

JOINT CONFERENCE OF ADMINISTRATIVE OFFICERS OF PUBLIC AND
PRIVATE SCHOOLS WITH MIDWESTERN INSTITUTE OF
PROFESSIONAL RELATIONS

"How Medicine Has Attained Professional Status," Dr. Anton J. Carlson, Frank P. Hixon Distinguished Service Professor Emeritus of Physiology, University of Chicago

"The Development and Maintenance of Professional Status in Law," Bernard C. Gavit, Professor of Law; Dean of the School of Law, Indiana University

"Progress toward Professional Status in Education," William S. Gray, Professor of Education; Executive Secretary, Committee on the Preparation of Teachers, University of Chicago

WHO'S WHO FOR JUNE

Writer of the news notes and authors of articles in the current number HAROLD A. ANDERSON, instructor in education and the teaching of English and teacher in the Laboratory Schools at the University of Chicago. WILLIAM J. E. CRISSY, instructor in psychology at the University of New Hampshire, Durham, New Hampshire. JAMES A. BOYD, director of student work, National Youth Administration for New Hampshire, Concord, New Hampshire. NELSON L. BOSSING, professor of secondary education at the University of Minnesota. WALTER F. CASSIDY, instructor in mathematics at the College of the City of New York. E. E. BRATCHER, superintendent of the public schools at Hot Springs, Arkansas. BROTHER WILLIAM MANG, C.S.C., supervisor of high schools of the Brothers of Holy Cross, Notre Dame, Indiana. FRANCES SWINEFORD, research assistant in the Department of Education at the University of Chicago. KARL J. HOLZINGER, professor of education at the University of Chicago.

The writers of reviews in the current number SAMUEL BARTH, teacher of industrial arts and placement counselor at Kelvyn Park High School, Chicago, Illinois. MARY E. COURTENAY, principal of Gompers School, Chicago, Illinois. MARGUERITE E. SCHULER, teacher in the Laboratory Schools at the University of Chicago. D. ROY MATHEWS, professor of history at Lewis Institute of the Illinois Institute of Technology, Chicago, Illinois. G. E. HAWKINS, teacher in the Laboratory Schools at the University of Chicago.

THE N.Y.A. STUDENT-WORK PROGRAM IN NEW HAMPSHIRE HIGH SCHOOLS

WILLIAM J. E. CRISSY

University of New Hampshire, Durham, New Hampshire

JAMES A. BOYD

National Youth Administration for New Hampshire, Concord, New Hampshire

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INTRODUCTION

IN JANUARY, 1940, a committee on evaluation was organized in New Hampshire, composed of representatives from the secondary schools and colleges in the state participating in the student-work program of the National Youth Administration. The committee conducted an evaluation study which attempted to answer the following questions: (1) What function is the N.Y.A. student-work program fulfilling for the high-school and college student workers in the state of New Hampshire? (2) What functions do the high-school and college student workers think the N.Y.A. program has fulfilled for them? (3) What functions may the N.Y.A. program fulfil for the student workers which from their point of view it is not now fulfilling? (4) What function is the program fulfilling for the student workers from the point of view of the high-school and college staff members who act as supervisors of the student projects? (5) What functions may it fulfil for the student workers which, from the point of view of the high-school and college supervisors, it has not yet fulfilled? (6) What are the jobs being done by the high-school and college workers? (7) What are the high-school and college student workers' attitudes toward the N.Y.A. work experience which they have had? (8) What are the student workers' attitudes toward their supervisors? (9) What are the student workers' attitudes toward the N.Y.A. program as a work program?

A complete report of the investigation has been published.¹ The

¹ William J. E. Crissy and Raigh Mason, "An Evaluation Study of the N.Y.A. Student Work Program in New Hampshire Schools and Colleges." Concord, New Hampshire: National Youth Administration for New Hampshire, 1940.

present article treats in summary fashion the results obtained, the conclusions drawn, and the recommendations made from that part of the study dealing with the secondary schools.

DATA FROM PUPILS

The questionnaire sent to the high-school student workers contained thirty-four questions on the values of the program to the N.Y.A. student worker participants. In addition to these thirty-four questions to be answered by "No," "Uncertain," or "Yes," the students were asked: (1) "What about your N.Y.A. experience have you liked best?" (2) "What about your N.Y.A. experience don't you like?" (3) "What do you think would improve the N.Y.A. program of work in your school?" An additional page was provided so that the respondent might elaborate on each of the following questions, which he had previously answered by "No," "Uncertain," or "Yes."

Has your N.Y.A. work developed your self-confidence?

Has your ability to think for yourself been developed through your N.Y.A. work experience?

Do you believe that any of the people whom you have met in or through your N.Y.A. work may be helpful to you in obtaining a job when you leave school?

Do you believe that your regular classroom work presents as many opportunities for developing your ability to think for yourself as does your N.Y.A. job?

The responses of the high-school pupils indicated that the work program had enabled them to learn how to assume responsibility, how to co-operate with others, and how to be more careful and accurate in their work. The group was divided in their opinions concerning those questions which dealt with acquiring worth-while skills, meeting people who might provide employment for them after graduation, and gaining through their N.Y.A. work a better idea of what they would like to do to make a living. Thus, from the point of view of the boys and girls employed on N.Y.A. work, traits valuable for future occupational adjustment had been acquired, but contributions of direct vocational utility had been made for only about half the pupils. However, school men recognize the difficulty at the high-school level of arranging jobs which have skill-acquisition values, especially for ninth- and tenth-grade pupils with no basic classroom training in vocational subjects. Similarly the opportunity

is limited for providing youth still in high school contacts with prospective employers. One aspect of this question worthy of consideration is whether high-school pupils realize that the closer relationship with their teachers made possible by the N.Y.A. work may serve as a mediate, if not an immediate, help to future employment.

A divergence of opinion between the sexes was revealed on some of the questions. The girls responded that their jobs had provided an opportunity for the acquisition of basic skills and for experience that would be valuable on out-of-school jobs in the future, while the boys were divided in their opinions on these matters. The girls reported that their jobs were in line with their real interests, while the boys replied that their jobs were not. The girls' responses were slightly affirmative on the question of whether their jobs had served an exploratory function for them, while the boys gave a decidedly negative reply to this question.

These sex differences may be explained by the fact that more often than not the boys were given work unrelated to their probable vocational objectives, while the girls were given clerical work, typewriting, and other skilled work. Table 1 summarizes the jobs done by each group. Some significant differences of opinion were found within each sex group when an analysis of the data was made on the basis of the kinds of work performed. A categorization of jobs into educative and non-educative was made for both boys and girls.

In the male group the non-educative category of jobs was formulated from those jobs which were indicated as inside maintenance with no special skill. In the educative group were included the jobs classified as laboratory assistants and clerical help with or without special skills. Interesting contrasts from the responses of these two groups are apparent. The non-educative group replied negatively to the question whether their jobs concerned the line of their real interests, while the educative group replied affirmatively to this same question. Likewise, on the question of whether their jobs had made their class work more meaningful, the non-educative group responded "No," and the educative group responded "Yes." The educative group felt that their jobs had developed new, worth-while interests, while the non-educative group was divided on the question. The educative group felt that their N.Y.A. supervisors expressed

interest in their personal plans and ambitions, while the non-educative group tended to respond negatively to this question. It is not surprising that the student workers who were under the supervision of high-school staff members and teachers felt a closer contact with their supervisors in terms of their own plans and ambitions than did those high-school pupils who worked under the direction of the

TABLE 1
DISTRIBUTION, ACCORDING TO KINDS OF WORK PERFORMED, OF 241 BOYS
AND 297 GIRLS EMPLOYED BY NATIONAL YOUTH
ADMINISTRATION IN HIGH SCHOOL

KIND OF WORK	Boys		Girls	
	Number	Per Cent	Number	Per Cent
Clerical work with dictation.....	0	0.0	2	0.6
Clerical work with duplicating.....	1	0.4	8	2.7
Clerical work with typewriting.....	2	0.8	19	6.4
Clerical work with two or more skills.....	4	1.7	17	5.7
Clerical work with no skills.....	6	2.5	34	11.4
Inside maintenance.....	58	24.1	25	8.4
Laboratory assistant.....	8	3.3	8	2.7
Library assistant with no skill.....	2	0.8	15	5.1
Library assistant with typewriting.....	0	0.0	1	0.3
Lunchroom assistant.....	5	2.1	18	6.1
Miscellaneous jobs with duplicating.....	3	1.3	10	3.4
Miscellaneous jobs with typewriting.....	2	0.8	18	6.1
Miscellaneous jobs with two or more skills.....	0	0.0	15	5.1
Miscellaneous jobs without special skills.....	55	22.8	36	12.1
Outside maintenance.....	13	5.4	0	0.0
No report.....	82	34.0	71	23.9
Total.....	241	100.0	297	100.0

janitor or some other person not concerned with vocations for which they were being trained.

In the case of the girls two similar contrasting groups were compared. In the non-educative group were considered those girls who engaged in inside maintenance with no special skills, and in the educative group were placed the library assistants, with or without skill, and the laboratory assistants. On the question whether they had developed new friendships through their N.Y.A. work, both groups of girls responded affirmatively, but the educative group responded more pronouncedly so. The educative group likewise

felt that they had acquired worth-while skills which they would not have acquired otherwise, while the non-educative group said that they had not. Also, the educative group said that their class work was made more meaningful by their jobs, while the non-educative group responded negatively to this question. Girls who fell into the group of educative workers said that their jobs had served to give them a better idea of what they would like to do to make a living, while the non-educative group among the girls said that their jobs had not served this function. The educative group responded negatively to the question whether the main value of the program was the money it enabled the pupil to earn, while the non-educative group was divided on this question.

Other factors which revealed differences of response included size of school and school grade of workers. The former analysis indicated, first, that new friendships were formed through the N.Y.A. job more frequently in smaller schools than in larger schools and, second, that persons in the larger schools more often reported that as a result of the N.Y.A. work they had a better idea of what they would like to do to make a living than did persons attending smaller schools. The analysis of the effect of school grade of workers revealed a more affirmative response to questions dealing with objectives gained through the work among persons in the high grades. This latter trend was to be expected since it is, obviously, easier to assign meaningful work to older pupils and to those who have had more classroom training.

The experiences on the job reported as "liked" by the boys, in order of frequency, were: interest in work, feeling of self-confidence and responsibility, associations with other people, procurement of extra financial aid for themselves, exploration of new fields of work, and relation of the job to the academic field. The girls reported the following experiences "liked": performance of office-work, association with other people, additional experience gained in chosen vocations, performance of library work, and development of sense of responsibility.

The experiences disliked by male workers were: uninteresting or monotonous work, failure of student body to co-operate, poor office conditions, limited number of hours of labor, too much re-

sponsibility, size of wage scale, and tardiness of pay checks. For the girls the disliked experiences were: tiresome work, correcting papers, washing blackboards, insufficiency of work, unpleasant tasks (called by some of the respondents "dirty jobs"), and washing windows.

The suggestions for improvement most frequently made by the boys were: more work hours, better-planned schedules for work, more co-operation from everyone concerned (anecdotal reports indicated that this criticism often referred to interference by other pupils with the work being done), less monotonous tasks, work that would be enjoyable to participants, a greater variety of jobs. The girls most frequently suggested: more jobs and more hours, a better-planned program, a better selection of types of work, change of attitude of fellow-workers and supervisors, and a new system of supervision. Few pupils of either sex indicated how to carry out the suggestions made.

DATA FROM SUPERVISORS

A questionnaire was sent to each supervisor of high-school N.Y.A. student workers within the state. The questionnaire contained forty statements, the first twenty of which were in the form of questions dealing with the objectives that the supervisor might consider legitimate goals of the N.Y.A. student-work program. The second twenty of these statements were designed to determine the extent to which these objectives had been realized by the supervisor in his local situation. The first group of these questions was to be answered "No," or "Uncertain," or "Yes." The second group was to be answered "To no extent," "To a limited extent," "To a medium extent," or "To a great extent." In addition to his responses to these statements, the supervisor was also requested to describe briefly the types of N.Y.A. work that he was directing and supervising, and he was asked for suggestions concerning the improvement of the N.Y.A. student-work program. A space was provided immediately below the list of forty statements for a listing of other desirable objectives which the supervisor might suggest.

The opinions of the supervisors were markedly in the affirmative on the following objectives as legitimate goals of the N.Y.A. student-work program: development in the pupil of a disposition to assume

responsibility; effecting co-operation with others; development of habits of dependability and punctuality; development of initiative; development of confidence in one's own ability; development of courtesy and tact; learning how to budget time for studies, work, and extra-curriculum activities; development of worth-while skills; and acquisition of work experience which might be considered an asset by future employers.

The only objective which did not receive an affirmative response was the question whether the student's N.Y.A. work experience would cause him to read extensively.

The supervisors' replies concerning their ability to achieve the objectives listed reveal the following noteworthy affirmative responses. For the most part they had arranged the jobs which they were supervising in such a way that pupils were enabled to develop ability to co-operate effectively. A significant proportion of the supervisors were able to arrange the work in such a manner that students were also enabled to develop initiative on the jobs. The supervisors also felt that opportunities had been afforded for students to develop a disposition to assume responsibility, to learn how to budget time in order to be able to complete classroom work and N.Y.A. assignments and to engage in extra-curriculum activities, to develop courtesy and tact, to develop dependability and punctuality, and to develop confidence in their own abilities.

In contrast to these responses they felt that they had not achieved, or had achieved to only a limited extent, the following objectives: arrangement of the tasks so that the pupils could do work in line with their interests and provision of jobs so that the workers could profit more from classroom work because of the experience gained on the job in related fields. Likewise the supervisors indicated that they had not been able to adjust work in such fashion that pupils might make valuable contacts for future employment, develop insight into social problems, gain ability to supervise the work of others, read more extensively, or make a more intelligent choice of a life-work.

An analysis of the supervisors' responses was also made on the basis of size of school and number of pupils supervised.

When a comparison was made of the responses of supervisors in

schools of more than a thousand pupils with the responses of supervisors in schools of fewer than a hundred pupils, interesting trends were revealed. The respondents from the schools with small enrolments gave a more affirmative answer than did those from schools of more than a thousand pupils to the question asking whether class work could be made more profitable for the pupil through his practical experience in related fields while on his N.Y.A. job. To the question whether a goal of the work program should be to enable the pupil to make a more intelligent choice of a life-vocation, the replies from the small-school group were affirmative, while the replies from the large-school group were divided between "Yes" and "No," with almost half of the replies from the latter group being "Uncertain." The small-school group indicated that they had not been able to provide work which would enable the pupils to make contacts valuable for future employment. While the supervisors in the large schools also tended to reply negatively to this same question, their responses were not so markedly negative as were those of the former group. The sharpest contrast in the realization of goals by the two groups was found in the statement asking whether the N.Y.A. job had provided the pupil with opportunity to read more extensively in connection with his work. In the small schools two-thirds of the group replied "To no extent" and only a very small percentage replied "To a great extent," while in the large-school group less than a fifth replied "To no extent" and about half replied "To a great extent." Since most of the supervisors had from one to five pupils on their projects, it was not possible to make a valid comparison of responses given by supervisors having small numbers of pupils in their charge and those having large numbers.

The suggestions for improvements most frequently made by the supervisors were: increased hours of work, elimination of age requirement, and closer supervision. Few persons indicated how the suggestions made might be carried out.

CONCLUSIONS AND RECOMMENDATIONS

The N.Y.A. workers in the high schools of New Hampshire enjoyed the jobs that they were doing and the projects to which they were assigned. Their jobs made valuable contributions to their

training; they were helped by their jobs to be more careful and accurate in their work; and the jobs enabled them to learn the meaning of responsibility, helped to develop their self-confidence, developed their ability to co-operate with others, and helped them to develop such traits as dependability and punctuality.

A large number of the high-school workers indicated that they had not been able to develop worth-while skills through their N.Y.A. jobs which they probably would not have acquired otherwise. This response is easily understandable, since it is administratively difficult to arrange jobs for inexperienced high-school pupils so that the jobs may contribute direct skill-training for the workers. The workers' descriptions of the jobs that they were doing gave evidence that in many schools the supervisors were able to utilize on their projects workers who were in the process of being trained in certain skills. This statement is particularly true of those supervisors to whom had been assigned pupils who were doing typewriting and stenographic work. It is recommended that beginning typists and beginning stenographers be employed in jobs where they are able to put into practice the skills being learned. A few pupils also reported that they were able to utilize their home-economics training and manual-arts work on the N.Y.A. jobs. Supervisors who were able to utilize these skills of workers were making the jobs decidedly and positively educational.

One approach to the problem of making the program serve an exploratory function might be to rotate the jobs done by each worker. This plan would involve careful consideration of the interests, the aptitudes, and the skills of each applicant in the light of the jobs that were available or that could be made available, and the transfer of each worker from one job to another, or even to two other jobs, during the period of school attendance. Thus, while a worker might serve on a job not in line with his abilities for a period of time, he might expect to be moved to work more appropriate for him as his skills and interests developed with progress in school. He would then gain from the program the useful experience of carrying out worth-while tasks, some of which might interest him intrinsically, while in others he would have extrinsic interest because of his understanding of their necessity despite his personal preference

for other tasks. One implication of this plan is that supervisors would see to it that workers be made acquainted with the worthwhileness of, and the needs served by, all jobs. The responses indicated that a closer relation between supervisor and pupil and a better understanding by the pupil of the work being done would be desirable.

It is further suggested that headmasters and other school officers direct inquiries to the state N.Y.A. office concerning projects that are being conducted in schools similar to theirs.

When an analysis was made of the high-school pupils' likes and dislikes of the N.Y.A. program, it was evident that the issue of paramount importance to them was interest in the work. Interest in the work was the predominant reason given for liking the job, and lack of interest was the reason given most frequently for disliking the job. This emphasis of the respondents on interest would imply that the supervisors should clearly indicate the objectives to be reached by each task assigned. Even when the task being done appears superficially to have little educational value, it should be presented to the pupil in such a way as to arouse his interest and enlist his responsibility for successful completion of the tasks assigned.

It is significant that four of the boys considered the pay too high for the work done, while four girls indicated that there was not enough work to do. Certainly, if the N.Y.A. work program is to be a genuine program of work and is to fulfil such an objective as giving pupils valuable vocational experiences, care should be taken to see that the jobs are genuine and that they are challenging to the pupils.

The suggestion for improvement most frequently made by the high-school pupils was that there should be more work hours. The carrying-out of this suggestion involves many issues, such as the state budget of funds and the allocation of those funds to various schools. However, this suggestion may argue for a more elastic payroll arrangement in an individual school.

Carrying out the suggestion that the work schedules be better planned would seem to be simple. The worker and the supervisor in individual conferences should be able to work out a schedule of specific hours that the pupil is to spend on the job each day. This schedule could be worked out for a minimum of three-week periods.

The statement that jobs should be made available only to persons who need them indicates the feeling of a few pupils that some persons in the state were receiving N.Y.A. aid who were not entitled to it on the basis of financial need.

The supervisors considered that all the objectives listed in their questionnaires were desirable for the N.Y.A. program except the objective of having pupils read more extensively as a result of the N.Y.A. jobs. The fact that supervisors in the high schools do not consider extensive reading a legitimate objective of the program is not surprising since it is difficult at the secondary-school level to provide jobs of such complexity as to require pupils to do some reading in connection with them. Furthermore, in recent years the trend in high-school training has been toward making available as much free time as possible for the pupils so that they may engage in various extra-curriculum activities.

However, the supervisors indicated that in practice they were able to realize only to a limited extent the objective of arranging the projects so that the pupils could do work in line with their interests and profit more from class work because of experience on the job.

In connection with the objective of arranging the job in such fashion that the pupil, through it, is able to make a more intelligent choice of a life's work, the suggestion might be made that, even though the job is entirely unrelated to the pupil's interest or training, he might make a job analysis and job specification for the work that he is performing and thus gain some insight into the particulars to be considered in choosing a vocation.

READJUSTMENTS IN THE SCHOOL PROGRAM FOR THE ADOLESCENT

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PROBLEMS AFFECTING EDUCATION OF ADOLESCENTS

IN CIVILIZED cultures today adolescent development has been retarded. In contrast with the relatively few months which were required for a primitive youth "to put away childish things" and become a man, the modern adolescent normally must anticipate at least ten years in which to make this transition. This lengthened period, along with other far-reaching changes in the general social structure, creates some major problems important for the education of the adolescent. While these problems are legion, this article will touch briefly on four major areas that affect the educational program of adolescents in greater or less degree in all civilized cultures, particularly as these are reflected in America.

Restriction of employment opportunities.—The first is related to the employment opportunities for youth. As technological development in industry has advanced, machines have displaced man-power until, in sheer defense of the rights of adults to work, youth has been shunted aside and has found that productive employment opportunities are more and more restricted to his elders. The more highly technicalized the culture, the more rigorously have employment privileges been denied youth. In America, as in most civilized countries, this fundamental tendency has been in evidence for over a generation. It has been greatly accentuated as a result of the depression following the World War.

Long before the depression, legislation placing restrictions of various kinds on employment of youth had been rather generally enacted in America, and such legislation has gained momentum with the serious rise of unemployment. Many states now forbid industrial employment to youths under sixteen. A child-labor amendment is

before the American people which, if and when ratified, will give Congress power to restrict employment of children before the age of eighteen within the United States.

The advance of technological development tends to reduce the employment possibilities in those phases of vocational activity immediately affected. Theoretically, such employment restriction should be offset by newer types of employment possibilities. Practically, the labor displacement caused by technological development in existing labor areas has not been offset by the increased opportunities arising from new types of employment supposedly created by technological advancement. There seems to be little indication of immediate correction of this employment lag. Competent social engineers tell us that the problem would be greatly accentuated were the full possibilities of present technological developments to be utilized. Extension of the period of youth's unemployability may, therefore, be safely anticipated.

There are some serious concomitant problems of adolescent education arising from technological development. Advancement in technology, while it makes necessary greater technical skills on the part of a few employees, reduces the complexity of vocational skills needed by the many to a few simple processes largely automatic in character. Homer P. Rainey, formerly director of the American Youth Commission of the American Council on Education, has estimated "that 90 per cent of all employed persons in the United States in all types of occupations and professions can be trained for the work of their particular jobs in six months or less."¹ He goes on to say that not more than 5 per cent of all workers in industry require special-skill training for their work.

With the advent of the machine and large-scale production, opportunities for advancement from shopwork to managerial positions have become relatively few. A study published in 1929 of a typical American industrial community with a population of about fifty thousand revealed that only ten possible opportunities for promotion to positions as foremen developed within the course of a twenty-one-

¹ Homer P. Rainey, "Our Youth Problem in the United States," *California Journal of Secondary Education*, XII (October, 1937), 336.

month period among a total of 4,240 industrial workers.¹ It has been estimated that less than 1 per cent of high-school-trained youth entering employment may hope to become "brain workers" or "bosses."²

Postponement of marriage.—The second problem, closely allied to the problem of the postponement of employment opportunities for modern adolescents, is that of postponement of the opportunity for early marriage. Whereas primitive man assumed marital relationships and established a family early in his adolescent period, in modern society the youth is ordinarily forced to postpone marriage until he is past the teen age. If his aspirations for adult vocational activities require highly technical or professional preparation, marriage for the average youth is out of the question before the age of twenty-five or thirty. Even in the case of girls, modern society frowns on marriage before the age of eighteen or twenty.

Postponement of marriage produces a serious problem of adjustment on the part of the adolescent. At the time when an awakening sex consciousness, with its biological urges and its emotional drives, demands expressional outlet, adolescents are faced with a long period of delay before these urges can be allowed to function normally. Providing for sublimation and redirection of the adolescent urges during this period of enforced delay in marriage, without producing emotional blockings or other serious maladjustments of personality, is an educational problem of the first magnitude. Within recent years there has been a much clearer recognition of the serious nature of the problems arising from enforced delay in early marriage opportunity for youth.

Postponement of assumption of civic responsibilities.—The third problem, the postponement of adult social-civic opportunities and responsibilities, flows naturally from the necessity of enforced unemployment and delayed marriage. Since our social economy and its adult encrusted mores center largely in the idea of individual economic independence and the family unit, the persons who have not

¹ Robert S. Lynd and Helen Merrell Lynd, *Middletown*, pp. 65-66. New York: Harcourt, Brace & Co., 1929.

² Homer P. Rainey, *How Fare American Youth?* P. 28. New York: D. Appleton-Century Co., Inc., 1937.

yet attained either or both are regarded as largely outside the adult social-civic unit.

Many recent youth studies reveal the critical nature of this problem. Among these, mention should be made of Bell's study¹ of more than thirteen thousand youth in Maryland, as well as the study of out-of-school youth in New York State made by Eckert and Marshall² as part of the recent New York Regents' Inquiry.

It becomes apparent from these studies and other sources how seriously later adolescence has been neglected, if not largely forgotten, by society. The young persons who for one reason or another, mostly economic, have not continued formal schooling are the most isolated. Not accepted as peers in social life by adults, not granted places of responsibility in the councils of adult civic groups, either because of legal disqualification or because of assumed immaturity, they are allowed to drift. Although they are of an age when parental care is beginning to be considered a burden, these adolescents are unable to fend for themselves because of economic discrimination against persons of this age, and they find their lot most unhappy. They have little opportunity for engaging in challenging constructive citizenship activities. Equally circumscribed are their social recreational privileges. Placed in a situation like the proverbial status of the widow, they do not fit into the social scheme of the married adults. The school does not welcome them to the social activities provided for early adolescence. Society does not consciously provide for them. Economically they are not able to take advantage of the more public entertainment and meager but costly recreational activities of the better type which many urban centers provide, such as lectures, symphony concerts, public dinner-dances, recreational clubs, etc. They must content themselves with semi-idleness or indulge in a low quality of social amusement consonant with their economic ability and the availability of such entertainment outlets to them.

¹ Howard M. Bell, *Youth Tell Their Story*. Conducted for the American Youth Commission. Washington: American Council on Education, 1938.

² Ruth E. Eckert and Thomas O. Marshall, *When Youth Leave School*. The Regents' Inquiry into the Character and Cost of Public Education in the State of New York. New York: McGraw-Hill Book Co., Inc., 1939.

Increasing complexity of society.—The fourth major problem area of adolescent education is so inclusive and complex yet so generally recognized that only brief allusion to it is necessary, namely, the increasingly complex nature of modern society, with its varied and correspondingly complex problems. The life of primitive man was simplicity itself in comparison with the world confronting the modern adolescent. Meager wants were supplied relatively easily from the chase. Later, crude but simple agricultural pursuits added to the supply of food to meet the needs of slowly developing wants. Social and organizational life was simple and readily understood. The education required by the adolescent to provide an adequate understanding of his society and to insure the needed abilities to function efficiently within that society could be obtained in a relatively short time.

Today it is urged that the entire amount of time made available through the enforced prolongation of the adolescent period is needed to equip the young person adequately to cope successfully with the intricacies of our expanding environment. A majority of adolescents today have not, and many never will, come into direct contact with the primary sources of the supply of life's staples, such as bread, meat, eggs, milk, and butter. As far as direct experience is concerned, for most adolescents, even into mature adulthood, the source of clothing always will be associated with the shop where the finished product is secured. The simple isolation of social units has gradually given way until the delicate structure of societal organization is sensibly affected by disturbances that take place in any part of the world.

EDUCATIONAL CONSIDERATIONS

Two broad categories of approach to a program of education for adolescents need to be considered briefly. The first concerns those more general aspects of education basic to the equipment of the adolescent for effective grappling with the problems of his environment in whatever form they may confront him. Any broad educational program must equip the adolescent with adequate knowledge concerning his environment, both physical and societal. He must also have an adequate understanding of himself—his strengths and weaknesses, his powers and limitations. More than ever is it true

that man cannot think in a vacuum. He cannot hope to cope with his world without a factual understanding of it.

However, the world in which the adolescent lives is rapidly changing. The conditions of yesterday give place, in part at least, to new situations today and again tomorrow. These changes are forever creating new situations and new problems. In a very real sense, the major activities of the adolescent and of the adult will be those concerned with meeting new situations and trying to find new meanings in them as well as new solutions to the problems of life presented in the ever changing environment. The ability to meet and solve the problems with which one is confronted requires facility in the use of skills and techniques necessary to problem solution.

The will to achieve has long been recognized to be of equal importance with the knowledge and the skill essential for achievement. Many believe that this third aspect of the triumvirate of general educational possessions of the adolescent is the most essential. It is sufficient to recognize that each is an aspect of an indispensable general educational ability necessary for the adolescent who would meet and solve life's problems successfully.

The second broad category of approach to an educational program for adolescence concerns the more specific educational aspects of the youth and his environment. It seems obvious from the nature of the problems confronting the adolescent today that the more immediate and important aspects of this educational task are somewhat clearly in evidence. At least five need to be considered briefly.

It is obvious that the modern adolescent is faced with a prolongation of the period between the beginning of awakening consciousness as an adolescent and admittance into the full status of adulthood. The task of formal education, therefore, is to enable him to live as fully as possible in an environment which characterizes or simulates that of the adult. The school must provide an environment where the adolescent may have vital experiences which contribute to the acquisition of the types of knowledge, skills, and attitudes essential for the larger participation in adult life.

Too, the task of education is to utilize this lengthened period of adolescence for more complete orientation of youth into the family and citizenship life of the community. Whereas primitive cultures

tended to bring the youth into immediate relationship to the family and community through assumption of full adult responsibilities, so-called "civilized" cultures have allowed youth to lose these vital contacts. Education must help youth to a better understanding of the family and its functions in modern society and help him to become more completely identified with the ongoing life of the community by assumption of significant citizenship responsibilities within the community. This task will require much closer co-operation than is at present evident on the part of the school, the home, and the citizenship agencies of the community.

It is not sufficient, however, to orient the youth with reference to his immediate environment. In the complexities of modern civilization he must be able to project the family and community citizenship pattern into the broader areas of state, national, and international life. Technological development has shrunk our world and brought its divergent racial and national groups into close juxtaposition with ever closer interrelations of political, social, and economic interests. The resultant complexities and intricacies of the problems arising must be understood and appreciated if the adolescent is to gain perspective and be happily oriented into the rapidly developing world-community. Giving the youth this understanding and orienting the adolescent into the family and citizenship life of the immediate community are two of the major tasks of adolescent education.

Another phase of adolescent orientation is related to the youth's vocational life. In the simpler stages of societal development, the educational problem at this point was simple. Now, with the multiplicity of vocational activities engaged in at the adult level and the limited nature of the understanding and skills required for most of them, the orientation of the adolescent into a suitable vocation for which his abilities and interests fit him is a difficult educational task. Fortunately, in one sense, the longer period of adolescence provides opportunity for better exploration and guidance on the part of the school, but the school's efforts will not suffice if the exploration and the guidance are conducted in the traditional manner. Youth can be fully oriented only if, along with an intellectual approach to the task, he is given firsthand experience as a producer and a wage-earner

identified, in some measure, with the economic life of his adult environment.

Finally, any program of adolescent education which is to be adequate must provide ways and means of orienting youth into the recreational and leisure-time opportunities which modern society provides for the adult. Up to the present time education has sorely neglected this important aspect of the adolescent's needs. Youth cannot be permitted to seek his leisure-time amusement within the limitations set by the near-absence of organized entertainment in many communities or by the type of commercial entertainment that panders to his restricted economic resources and to his socially undeveloped tastes. Proper vocational orientation should correct the economic limitations involved, but society, through the school and other civic agencies, must provide a wide range of entertainment and recreational life which will bring the adolescent into social contact with adults. By this means there can be established socially beneficial interests and habits which will bridge the transition from adolescence to adulthood.

THE COURSE CONTENT IN COMMERCIAL MATHEMATICS

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THE PROBLEM

WITHIN the past quarter-century there has been much controversy over what should be included in a course in commercial mathematics. In 1934 a large group of office managers rated such a course second among practical commercial subjects.¹ Yet in many places the course in commercial mathematics has fallen into disrepute, with the result that the schools offering it are decreasing in number. The first term of a course in commercial mathematics usually consists in repeating the elementary-school work in addition, subtraction, multiplication, division, and common and decimal fractions. Such a repetition seldom challenges the pupil's interest and often is a waste of time.²

The content of the course in commercial mathematics as now taught in most schools has no scientific reason for existence, since it is not known, as yet, how closely this subject matter satisfies the needs of the business world. Moreover, thinkers in the field suggest that, because of the prevalence of calculating machines in business offices, the informational aim should be given greater recognition than the operational. Furthermore, businessmen are justly annoyed by the school's failure to teach a mathematics vocabulary, since the chief difficulty of the business apprentice seems to be his lack of understanding of language concepts behind problem-solving. The pupil entering business with a precise and adequate terminology, thoroughly understood, would find his apprenticeship period appreciably

¹ C. L. Bailey, "A Radio Program in Commercial Education," *Journal of Business Education*, X (November, 1934), 11.

² H. E. Stelson, "A Proposed Course in Business Arithmetic," *School Science and Mathematics*, XXXIV (January, 1934), 91.

shortened. Thus the controversy concerning the content of the course in commercial mathematics is still going on.

The writer of this article has attempted to validate some basic mathematics items for the curriculum in commercial mathematics. This justification, or validation, has been made by subjecting commercial mathematics items to specific tests or criteria of social and vocational usefulness. By "usefulness" is meant fitness for some desirable, practical purpose. "Social usefulness," in this investigation, means the preparation of the individual, through a course in commercial mathematics, for effective social contacts and relationships with his associates in his daily community life. "Vocational usefulness," in this investigation, means the preparation of the pupil, through a course in commercial mathematics, for efficient business life.

This study is of value to the following persons: (1) teachers of commercial mathematics who are interested in a validation of certain items in their subject; (2) curriculum-builders who seek to determine the basic content of a course in commercial mathematics or elementary business training (elementary business training is a combination of mathematics and economics); (3) educators who wish to eliminate much of the operational arithmetic in the course of study and replace it with informational arithmetic; (4) individuals who are interested in civil-service preparation and who wish to secure vocational information from the analysis of the mathematical content of these examinations; (5) educational agencies which offer courses in the operation of business machines and desire to have readily at hand the basic content in commercial mathematics which the pupil should be given.

SETTING UP CRITERIA

The two major bases for this validation, therefore, were social and vocational utility. Specifically, the writer set up six separate and independent criteria to determine usefulness. One of the six criteria is concerned with validation for social utility, and the remaining five criteria are concerned with validation for vocational utility. Thus any mathematical item finally validated must have satisfied either the one criterion for social utility or two of the five criteria for vocational utility. Briefly these criteria were as follows:

1. The first criterion came from an analysis of seven theses which treat of the social usefulness of mathematical items. The writer set up a list of items which were found at least once in four or more of the seven theses. Under social utility were included such situations as buying; investing; reading; traveling; and the general economic activities of the county, state, and nation. While it is true that only one criterion was set up for the purpose of validating items by the test of social utility, yet this one criterion was a composite of several other separate criteria established earlier through the work of other investigators in the field.

2. The second criterion, a test of vocational utility, flowed from an analysis of seven high-school and college textbooks in accounting and bookkeeping, in which certain commercial mathematics items are more or less commonly found. The writer made a list of such items which were found at least once in four or more of seven textbooks. The reason for using textbooks in high-school and college accounting and bookkeeping was that commercial pupils usually take at least introductory courses in accounting and bookkeeping, since these subjects are basic necessities in every business. It has been found necessary in commercial schools to require a course in commercial mathematics either before the accounting course or at the same time the accounting course is taken. The accounting and bookkeeping textbooks were analyzed for mathematical items, since the presence of these items in such textbooks furnishes a validation for the items in a course in commercial mathematics.

3. The third criterion, a test of vocational utility, was derived from an analysis of 155 pieces of sales-promotion literature of six nationally known business-machine companies, in which certain mathematical items were found. From these 155 pieces of sales-promotion literature the writer established a list of items which were found at least once in the sales literature of three or more of six business-machine companies. The literature of business-machine manufacturers was used because the personnel managers of several large companies had informed the writer that the prime requisite for almost all clerical positions is efficiency on at least one business machine. Although at first glance this ability may appear to be an operational skill, nevertheless it is informational as well, since the use of billing and book-

keeping machines requires some factual (informational) knowledge. An office-machine operator should be more than a robot; he should understand the mathematical ideas behind the machine's calculation and postings. These mathematical ideas are the mathematical items described in the sales literature of business-machine companies. Therefore an analysis of mathematical items found in the sales literature would serve, it seemed, to furnish a criterion for validation.

4. The fourth criterion, a test of vocational utility, arose from an analysis of seventeen civil-service examinations given in New York City for accountant, bookkeeper, and clerk, in which mathematical items are found. From these seventeen civil-service examinations the writer formed a list of items which were found once in nine or more examinations. It was planned, at first, to analyze federal, New York State, and New York City examinations for the positions of clerk, accountant, and bookkeeper. It was hoped, also, that the Navy Department would allow the use of the yeoman examinations through which enlisted men are promoted. Unfortunately, however, the only examinations available for investigation were those of New York City.

5. The fifth criterion, a test of vocational utility, was set up from an analysis of one year's issue of each of six national trade journals in which some mathematical items are found. From these six national trade journals the writer listed items which occurred at least once in half or more of the number of copies in one year's issue of a single trade journal. The volumes issued in 1938 were used in the case of five journals, and the volume from July, 1938, to June, 1939, for the remaining journal. These trade journals were used because each branch of business, such as insurance, retailing, and banking, has its own mathematical requirements, differing somewhat from the others. A cross-section of these requirements is determined by an examination of the mathematical items found in trade journals. The six journals used have a national circulation and give an insight into the mathematical requirements of accounting, investment banking, public utilities, retailing, credit organizations, and insurance.

6. The sixth criterion, a test of vocational utility, grew out of an analysis of the answers to a check list of commercial mathematics items submitted to fifty certified public accountants. The writer set

up a list of items which were checked in twenty-six or more of fifty answers of these accountants. The testimony of these accountants was used for the reason that certified public accountants utilize many items of commercial mathematics in their audits, which cover all fields of business endeavor.

From the analysis of these six sources the writer established one criterion for determining the social usefulness of items in commercial mathematics (a criterion which is, of course, a composite of several other criteria) and five criteria for determining the vocational usefulness of these same items. For an item to be validated under the criterion for social utility, it must have been found in at least four of seven theses. However, an item which did not meet the criterion for social utility might be validated by satisfying two of the five criteria for vocational utility. Thus, even though an item failed to satisfy the one criterion for social utility, it might satisfy the criteria for vocational utility.

VALIDATION OF ITEMS

The scope of this study is limited to a validation of some basic mathematical items for the curriculum in commercial mathematics. In time, it is limited to the period from 1928 to 1939 because (1) this period is the one in which most investigations have taken place and (2) in this period the increasingly common use of business machines in office practice caused changes in the educational requirements of office workers. This study is not concerned with any of the operational skills but is limited solely to informational mathematics for the commercial mathematics curriculum.

The following steps comprised the procedure: (1) A check list was prepared of mathematical items taken from ten textbooks in commercial mathematics. Ten were considered an adequate sampling since these books were representative selections of prominent publishers in this field. (2) The mathematical items in the check list were validated by the application of the one criterion for social utility. (3) The items in the check list were validated by the application of each of the five criteria for vocational utility. Thus, although an item might fail to be validated by the criterion of social utility, it was considered validated, nevertheless, if it satisfied two of the five criteria under the test of vocational utility. For an item to satisfy

two of the five criteria is in itself a severe test because of the high standard which each item must meet in each separate criterion. (4) The composite rank of each item was determined from the individual ranks which the item held in each of the six sources. From the composite rank the curriculum-builder can determine the importance of items for the content of the course in commercial mathematics. (5) The degrees of validation of the items in the check list were determined when the criteria were increased beyond two. The commercial mathematics items satisfying these criteria are shown on pages 442-43.

DIRECT CONCLUSIONS DRAWN FROM THE STUDY

1. It is possible, by use of the procedure and criteria used in this investigation, to validate 102 basic mathematical items for the curriculum in commercial mathematics.

2. It would be possible to validate seventy-nine basic mathematical items for the commercial mathematics curriculum if the criteria for validation were increased from two to three.

3. It would be possible to validate forty-nine basic mathematical items for the commercial mathematics curriculum if the criteria for validation were increased from three to four.

4. It would be possible to validate eighteen basic mathematical items for the commercial mathematics curriculum if the criteria for validation were increased from four to five.

5. It is evident that, if the criteria for validation by vocational utility were increased beyond two, many items considered necessary by authorities in the field would have to be omitted from the commercial mathematics curriculum.

6. A course in commercial mathematics can be built around the validated items with some degree of scientific accuracy.

7. Since every item which satisfied the criterion for social utility was found to have satisfied also at least two of the five criteria for vocational utility, it would seem that final differentiation between social and vocational utility is difficult.

8. The items of budgeting and simple interest, which satisfied the majority test of the civil-service examinations, are two of the most essential items in commercial mathematics. These items are important because of their social and vocational usefulness, as shown

COMMERCIAL MATHEMATICS ITEMS SATISFYING CRITERIA OF SOCIAL
AND VOCATIONAL UTILITY ARRANGED ACCORDING TO
NUMBER OF CRITERIA MET

- A. One criterion of social utility and five criteria of vocational utility
1. Budgeting
 2. Simple interest
- B. One criterion of social utility and four criteria of vocational utility
1. Annuities
 2. Assessed valuation on property
 3. Assets, business
 4. Assets, depreciation of
 5. Cash
 6. Compound interest
 7. Credit
 8. Debt
 9. Income
 10. Instalment buying
 11. Insurance, life
 12. Inventory-taking
 13. Mortgage
 14. Taxes on income
 15. Taxes on real estate
 16. Tax-rate
- C. One criterion of social utility and three criteria of vocational utility
1. Bank discount
 2. Checking accounts
 3. Promissory notes
- D. One criterion of social utility and two criteria of vocational utility
1. Building and loan associations
 2. Foreign money
 3. Trade acceptance
- E. Four criteria of vocational utility
1. Accounts payable
 2. Accounts receivable
 3. Balance sheet
 4. Bank balances
 5. Bonds, cost of
 6. Bonds, premium on
- E. Four criteria of vocational utility
—continued
7. Cash discount
 8. Commission
 9. Cost
 10. Debit
 11. Insurance against fire
 12. Labor, cost of
 13. Labor, productive
 14. Liabilities
 15. Operating expenses
 16. Overhead expenses
 17. Parcel post
 18. Payroll distribution
 19. Profit and loss, statement of
 20. Profits, gross
 21. Profits, net
 22. Profits, surplus
 23. Sales records
 24. Stocks, dividends from
 25. Stocks, market value
 26. Stocks, par value
 27. Stocks, tax on
 28. Trade discount
- F. Three criteria of vocational utility
1. Assets, depletion of
 2. Bank accounts for savings
 3. Bankruptcy
 4. Bank statements, reconciliation of
 5. Bonds, discount on
 6. Bonds, yield of
 7. Bonus
 8. Brokerage, real-estate
 9. Brokerage, stock
 10. Corporations, organization of
 11. Credit rating
 12. Freight-rates
 13. Labor, non-productive
 14. Net worth

- | | |
|---|--|
| <p>F. Three criteria of vocational utility
—<i>continued</i></p> <ol style="list-style-type: none"> 15. Notes, discounting 16. Notes, interest-bearing 17. Notes, maturity of 18. Partial payments 19. Profit and loss in partnerships, distribution of 20. Profits, undivided 21. Stock, common 22. Stock exchange 23. Stock without par value 24. Stock, preferred 25. Transportation, cost of 26. Unemployment insurance 27. Wages, hourly-rate system <p>G. Two criteria of vocational utility</p> <ol style="list-style-type: none"> 1. Bonds, amortization of 2. Currency denominations for pay roll 3. Deficits 4. Drafts, bank 5. Drafts, commercial 6. Drafts, sight 7. Drafts, time 8. Graphs, broken-line | <p>G. Two criteria of vocational utility
—<i>continued</i></p> <ol style="list-style-type: none"> 9. Graphs, divided-bar 10. Graphs, horizontal-bar 11. Graphs, several curves on one 12. Graphs, single curve 13. Graphs, vertical-bar 14. Insurance, accident 15. Insurance, automobile 16. Insurance, cash-surrender value of life 17. Insurance, health 18. Money orders 19. Pensions 20. Reserves 21. Taxes on sales 22. Wages for overtime work 23. Wages for piece work <p>H. One criterion of vocational utility</p> <ol style="list-style-type: none"> 1. Accounts, equation of 2. Drawing to scale 3. Graphs, pictorial 4. Graphs, circle 5. Square root 6. Tariff duties 7. Taxes, excise |
|---|--|

by their meeting the one criterion for social utility and all five criteria for vocational utility.

9. The value of the items in a commercial mathematics curriculum can be tested by the degrees of validation and by the composite ranking presented in this article.

10. Many of the mathematical items found in the trade journals, such as pensions and unemployment insurance, reflect the emphasis on social and vocational security in contemporary life. Consequently such items are important for the commercial mathematics curriculum.

11. The certified public accountants were conservative in their opinions regarding the items to be validated; their responses indicated that they would rather have an item retained in the commercial mathematics curriculum than have it rejected entirely.

12. Curriculum-builders will be able to construct a basic course of study in business training at either the junior or the senior level by using the degrees of validation of the various items and the composite rankings.

13. Mathematics teachers can determine from this study the types of graphs which should be taught and emphasized in the classroom because of their social and vocational utility.

14. In the main, the ten commercial mathematics textbooks examined for items for the check list were found adequate and satisfactory, for many of the items selected therefrom were later validated.

RECOMMENDATIONS RESULTING FROM THE STUDY

1. The 102 items which have been validated either by the one criterion of social utility or by two of the five criteria of vocational utility should be substituted in the commercial mathematics curriculum for operational arithmetic. Operational arithmetic should be taught in the elementary school or in the business-machine curriculum and not in the commercial mathematics curriculum.

2. These 102 items should furnish the content for a worth-while commercial mathematics course that will serve to challenge the ability of intelligent pupils.

3. Items for informational arithmetic should be selected by the curriculum-maker according to the degrees of validation and the composite rankings.

4. It is suggested that educational agencies offering courses in business-machine operation determine, through the use of these findings, the basic mathematical knowledge which the pupil should acquire.

5. Writers of textbooks in commercial mathematics should be able to decide with scientific accuracy what materials to include, what to exclude, and what to emphasize.

THE SIX-WEEK TERM AT MISSISSIPPI COLLEGE

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*

INTRODUCTION OF THE SIX-WEEK TERM

IN THE early months of the calendar year 1937, a special committee of faculty members of Mississippi College was appointed by President Nelson for the purpose of studying reorganization needs of the institution. The appointment of this committee was the culmination of a long-felt need for improvement in the college's program. The first outcome of the work of this committee was the six-week term. The plan as submitted by the committee was adopted by the faculty with only one negative vote and was launched at the opening of the school year 1937-38. At the time of the writing of this article the plan had been in operation for three years.

In the six-week-term plan the regular school year is divided into six terms of six weeks each. The summer school has been shortened to a six-week term and is referred to as the seventh term. Many teachers whose schools close early in the summer enrol for the sixth term and remain through the seventh. Those who wish to take more summer work than can be done at Mississippi College during the seventh term continue their work in some other institution during the latter part of the summer in what may conveniently be called an eighth term. During each term at Mississippi College each class meets six times a week for six weeks—a total of thirty-six meetings. Each three-semester-hour class meets for one and a half clock hours each day; thus the amount of class time in six weeks is equivalent to the total time used in any three-semester-hour course. Laboratory periods run for three clock hours. All scheduled courses are either three-semester-hour courses or multiples of three. A full-time student carries two three-hour courses or one six-hour course each term.

After three years it is possible to evaluate, to some extent, the claims originally made for the plan, as well as additional advantages

which have been recognized. A study is being made which deals with students' marks during the last two years of the semester plan in comparison with the first two years of the six-week-term plan. This article is based on the findings of that objective study. There is definite evidence that the quality of work done by both faculty and students has been improved by the change from the semester to the six-week-term plan. It has been necessary for the teachers to re-evaluate and to reorganize their courses. The change has also stimulated a more pronounced professional attitude on the part of the staff as a whole. Evidence of this change in attitude culminated in the appointment and activity, during the third year of the six-week-term plan, of four special faculty committees. These committees worked throughout the year 1939-40 on a re-examination and re-evaluation of the college's mission. Most of the members of the teaching staff entered enthusiastically into this program of study.

STUDENTS' MARKS BEFORE AND AFTER ADOPTION OF SIX-WEEK TERM

Evidence of the improvement of the quality of the students' work, as revealed in marks, is found in the objective study referred to. Although the study has not been finished, some evidence is available. In making this study during the year 1939-40, the writer was assisted in the collection of the necessary data by a few upper-classmen who had previously completed a first course in statistical method. Since the data from the records of the four Freshman classes only (1935-38) had been collected and organized before the writing of this paper, the evidence cited from this study will be confined to those groups. Later reports will give more complete evidence covering all classes—Freshman to Senior—for the two years 1935-37 under the semester plan and 1937-39 under the six-week-term plan.

Table 1 gives a summary of the marks obtained by all Freshmen entering in 1935 and 1936 (under the semester plan) and in the two years of 1937 and 1938 (under the six-week term). The difference of 4 in the percentage of failures under the six-week plan is statistically significant, but the statistical significance of other differences

mentioned later has not yet been checked unless so stated. Whatever the cause, the percentages of failures and of high marks seem to indicate that Freshmen under the short-term plan made fewer failures and more honor marks than did Freshmen under the semester plan.

Further analysis of the percentages of courses failed by Freshmen during the first and the second semester under both plans indicates

TABLE 1
COMPARISON OF RECORDS OF FRESHMEN ENTERING MISSISSIPPI
COLLEGE IN 1935 AND 1936 UNDER SEMESTER PLAN AND IN
1937 AND 1938 UNDER SIX-WEEK-TERM PLAN

	Freshmen Entering in 1935 and 1936 under Semester Plan	Freshmen Entering in 1937 and 1938 under Six-Week-Term Plan
Percentage of courses failed:*		
Entire period†.....	15.2	11.2
First semester.....	16.6	9.8
Second semester.....	13.8	12.6
Percentage of marks of A:		
Entire period.....	7.6	10.2
First semester.....	7.2	9.4
Second semester.....	8.0	11.2
Percentage of marks of A and B combined:		
Entire period.....	30.1	34.2
First semester.....	27.8	30.5
Second semester.....	32.4	38.5

* "Courses failed" includes all conditioned, failed, and incomplete courses.

† The difference is statistically significant.

that better marks were received by Freshmen under the six-week-term plan but that the better marks were more pronounced in the first semester than in the year as a whole. This finding indicates, in turn, that the results in the second semester under the two plans were more alike than the results in the first semester: the percentage of failure in the second semester of the last two years was only 1.2 lower than that of the first two years.

A more refined examination of these data in Table 2 shows that the percentage of courses failed under the semester plan tended to

decrease from the first to the second semester both in 1935-36 and in 1936-37 but that the total percentage of failures was greater in the second year than it was in the first year. During the first year the percentage of A's increased slightly from the first to the second semester and remained almost constant throughout the second year. It was lower throughout the second year than during the first year. The same trends were evident in a comparison of A's and B's combined.

TABLE 2

COMPARISON OF RECORDS EACH YEAR OF FRESHMEN ENTERING MISSISSIPPI COLLEGE UNDER SEMESTER PLAN AND UNDER SIX-WEEK-TERM PLAN

	FRESHMEN ENTERING UNDER SEMESTER PLAN		FRESHMEN ENTERING UNDER SIX-WEEK-TERM PLAN	
	1935-36	1936-37	1937-38	1938-39
Percentage of courses failed:*				
Entire period.....	13.6	17.1	11.2	11.2
First semester.....	15.0	18.3	8.9	10.9
Second semester.....	12.2	15.5	13.9	11.5
Percentage of marks of A:				
Entire period.....	8.8	6.1	11.1	9.3
First semester.....	8.1	6.1	11.1	7.4
Second semester.....	9.6	6.2	11.1	11.3
Percentage of marks of A and B combined:				
Entire period.....	32.6	27.0	37.2	30.7
First semester.....	29.1	26.2	34.5	25.9
Second semester.....	36.5	27.9	40.7	35.7

*"Courses failed" includes all conditioned, failed, and incomplete courses.

However, the corresponding percentages under the six-week-term plan show a more favorable situation. The percentage of failures increased slightly from the first to the second semester in 1937-38 but was practically constant during 1938-39. The percentages of failure for the entire period were exactly the same in the two years and were lower than the corresponding percentages under the semester plan. The percentage of A's received from the first to the second semester during the year 1937-38 was constant but increased during the year 1938-39. Comparisons of corresponding semesters

and years on the bases of percentages of A's, and of A's and B's combined, with one exception, showed better results in each case under the six-week plan than under the semester plan. However, none of these comparisons has been checked for the significance of the difference.

On the basis of this analysis it is, however, accurate to say (1) that results were becoming more unsatisfactory during the two years under the semester plan, (2) that they improved under the

TABLE 3
TWO-YEAR RECORDS OF FRESHMEN ENTERING IN 1937
AND 1938 UNDER SIX-WEEK-TERM PLAN

TERM	PERCENTAGE OF COURSES FAILED*		PERCENTAGE OF MARKS OF A AND B	
	1937-38	1938-39	1937-38	1938-39
First.....	7.5	5.6	28.7	15.0
Second.....	7.4	12.1	40.9	33.9
Third†.....	11.7	15.3	35.2	30.1
Fourth.....	12.9	11.9	41.4	42.2
Fifth‡.....	15.0	12.5	42.9	30.0
Sixth.....	14.1	10.0	37.9	34.7

* "Courses failed" includes all conditioned, failed, and incomplete courses.

† Includes Christmas vacation of fifteen days.

‡ Includes spring vacation of eight days.

six-week-term plan, and (3) that the improved condition tended to remain constant from semester to semester under the six-week plan. Of course the analysis of these data does not prove that this improvement is the result of the change in the organization of the college from the semester to the short term; it merely suggests this change as a possible explanation.

TREND OF MARKS UNDER SIX-WEEK TERM

Since the foregoing analysis indicates more satisfactory results under the short term than under the semester plan of organization, further analysis of the marks obtained under the six-week-term plan may be of interest. The data were originally collected by terms with this analysis in mind. Of course, this consideration will involve the

years 1937-39 only since the shortest unit of organization prior to that time was the semester.

The data in this form are given in Table 3. It is apparent that, from the standpoint of failures, the first term's work tended to be the best. It is also evident that the highest record of failures during the first semester came in each of the two years in the third term, and during the second semester in the fifth term. It is probably significant to note that the Christmas and the spring vacations come during those terms, usually in the middle of each. It may be significant, also, to note that the length of the Christmas vacation period is usually double that of the spring holiday period. This part of the findings of the study may suggest the existence of a relation between short vacation periods and forgetting, as shown by studies of summer forgetting which have been made in the past. This suggestion of the study may prove of practical value.

The foregoing suggestion is strengthened by observing the trends in the percentages of A's and B's combined, by terms for each of the two years. In the third term of the first semester of each year and in the fifth term of the second year, the percentages of A's and B's were low. These data on failure and on distinction marks suggest the need for a more careful study of the effects of short vacations on the quality of work done by college Freshmen or by any group of students. Such a suggestion could not have resulted from an analysis of semester marks only.

THE PUPIL IN THE CATHOLIC HIGH SCHOOL FOR BOYS

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*

THE average Catholic high school for boys in the states comprising the area of the North Central Association of Colleges and Secondary Schools has approximately 375 pupils, almost three times the enrolment of the average Catholic high school in the United States. It is usually located in the larger cities; it is a central high school in the sense that it draws pupils from more than one parish church; its faculty is, as a rule, composed of men who are members of religious orders; it is an accredited high school; and it is a tuition school, the average tuition rate being approximately seventy-five dollars a year.¹

From the point of view of the program of studies, the Catholic high school for boys in the North Central Association area is a traditional and conservative institution. Two of the three curriculums offered in the average school are college preparatory in nature and content. Almost three-fourths of the average offering of 29.9 units are in the five fields of English, social studies, science, mathematics, and foreign language. Including 3.1 units in religion, 19.1 units are necessary for graduation, and, of these, fifteen units are required: 3.1 in religion, 4.0 in English, 2.3 in social studies, 1.9 in mathematics, 1.8 in foreign language, 1.5 in science, and 0.4 in physical education. The elective units are largely in the academic and in the commercial subjects, although almost all schools offer work (non-credit courses usually) in glee club, in band, and in orchestra. The commercial curriculum is the only distinctive vocational curriculum offered in more than half the schools, other practical-arts programs being rarely offered.

In view of the fact that the Catholic high school for boys is a

¹ For supporting data of factual statements in this article, see Mang (6).

tuition school and has a program of studies in which the required subjects for graduation are those usually prescribed for college entrance, it might be thought that the student body is a highly selected one. The purpose of this article is to present information on several characteristics of the pupils of such schools. What proportion of their fathers are native born? What are the occupations of the fathers? What is the intellectual status of pupils in these schools? What are their educational and vocational plans? How do pupils in the Catholic high schools for boys differ in these particulars from pupils in the public high schools?

The data concerning the boy in the Catholic high school are taken from a study including 7,459 boys, or 87.6 per cent of all the enrolments, of twenty-one Catholic high schools for boys in the states of the North Central Association. The twenty-one schools are representative of all Catholic high schools for boys in the North Central Association area with respect to size, accreditation, type of control of the schools, tuition charge, program of studies, and the teaching bodies in charge of the schools.

The data on the public-school pupil are taken from several sources but principally from two monographs (3, 4) of the National Survey of Secondary Education. Of the thirty-four full-time high schools—comprehensive, general, technical, commercial, and trade—reported in sections of these two monographs, eleven schools, located in nine cities, are general high schools. The data concerning pupils of general high schools are used for comparison because these schools, while somewhat more selective than the other types from the viewpoints of occupations of fathers (4: 51) and intelligence of pupils (4: 21), more nearly resemble the Catholic high schools of this study from the point of view of program of studies than do any of the other groups of schools.

COUNTRY OF BIRTH OF FATHERS

That the pupils in the twenty-one Catholic high schools and in the eleven general high schools do not differ to any great extent with respect to country of birth of fathers is shown in Table 1. Almost three-fourths of the fathers of pupils in both groups of schools were born in the United States. The greatest variations are in the per-

centages representing fathers born in Ireland, Russia, Poland, and the British Empire. The total percentages of fathers born in countries in which English is the language in common use are 82.8 for the Catholic high schools and 80.7 for the general high schools.

TABLE 1
PERCENTAGE DISTRIBUTION, ACCORDING TO
COUNTRY OF BIRTH, OF FATHERS OF PUPILS IN
TWENTY-ONE CATHOLIC HIGH SCHOOLS AND
IN ELEVEN GENERAL HIGH SCHOOLS

Country of Birth	Catholic High Schools	General High Schools*
United States.....	72.2	74.7
Austria-Hungary.....	1.7	2.0
Balkan states.....	1.2	1.7
British Empire.....	1.8	4.9
Germany.....	2.1	2.7
Ireland.....	8.8	1.1
Italy.....	2.4	3.2
Poland.....	5.3	1.6
Russia.....	0.1	4.6
Scandinavia.....	0.2	1.7
All others.....	4.2	1.8
Total.....	100.0	100.0

* Data derived from Kefauver, Noll, and Drake (3: 143).

OCCUPATIONS OF FATHERS

The occupation or means of livelihood of the head of a family is one of the most commonly used indices for determining the socio-economic status of pupils. Because of the tuition fee in the Catholic high schools of this study, it is of interest to examine the types of work in which the fathers of boys attending these schools are employed.

The classification of the occupations of fathers follows that used by Counts (1: 22-23). In deriving the percentages of fathers in the various occupational fields for the eleven general high schools, the writer referred to the two monographs previously cited (3, 4) in order to determine under which of Counts's classifications various groups of workers should be placed. The "semi-professional group"—4.03 per cent of the fathers in the eleven general high schools

(3: 150)—contains lists of occupations which, in Counts's classification, would be placed under professional, commercial, or clerical positions. As it is impossible to determine their exact classification from the data presented, 2.00 per cent were placed under the professional group and 2.03 per cent under commercial and clerical occupations. Moreover, only 7.40 per cent of the fathers of the pupils in the eleven general high schools were in commercial and clerical fields. However, the classification of various types of work in *The Secondary-School Population* (4: 44-48) obviously indicates that many men

TABLE 2

PERCENTAGE DISTRIBUTION, ACCORDING TO OCCUPATIONAL STATUS, OF FATHERS OF PUPILS IN TWENTY-ONE CATHOLIC HIGH SCHOOLS, IN ELEVEN GENERAL HIGH SCHOOLS, AND IN HIGH SCHOOLS OF FOUR CITIES

Occupational Group	Catholic High Schools	General High Schools*	High Schools in Four Cities†
Proprietary.....	9.7	11.3	19.8
Professional.....	6.5	7.5	9.4
Managerial, commercial, and clerical.....	32.2	40.3	31.8
Manual.....	45.7	36.0	35.8
All others.....	5.8	4.9	3.2
Total.....	99.9	100.0	100.0

* Data derived by the writer from Kefauver, Noll, and Drake (3: 150).

† Data adapted by the writer from Counts (1: 26).

in commercial and clerical positions were classified as managerial workers. Hence, for purposes of this study, the managerial, commercial, and clerical types of work were placed in one group. All "manual" workers are considered together, and there was no difficulty in classifying them.

The percentages of the occupations of fathers of pupils in three groups of high schools—twenty-one Catholic schools, eleven general schools, and the high schools of four cities—are given in Table 2. The figures representing the proprietary and professional groups are greater, and the percentages of "manual" workers are smaller, for the two groups of public schools than for the twenty-one Catholic

schools. The percentage for the managerial-commercial-clerical group in the Catholic schools is smaller than that in the eleven general schools and slightly larger than that for the four high schools in Counts's study. Almost half the fathers of pupils in the Catholic high schools are engaged in earning their livelihood in occupations manual in nature, while slightly more than a third of the fathers of the two groups of public-school pupils are employed in this type of work. From the point of view of occupational status, indicated by the proportion of manual workers among fathers of pupils, it is apparent that the pupils in the Catholic high schools of this study are less selected than pupils of either group of public schools. Probably, if all types of public high schools investigated in the National Survey of Secondary Education were considered, the differences in the occupations of fathers of pupils in the Catholic high schools and in the public high schools would not vary significantly.

INTELLIGENCE OF PUPILS

The Catholic high school boys of this study are somewhat superior intellectually and more homogeneous in mental ability than are pupils in groups of public high schools investigated in the National Survey of Secondary Education. On the Otis Self-administering Test of Mental Ability, Higher Examination, Form A, the median intelligence quotient of a representative group of 2,572 boys in twenty of the twenty-one Catholic high schools was 106 (6: 156). The median for 9,120 pupils for all grades and high schools combined, reported in the National Survey, was 102 on the Otis Higher Examination, Form A, and on the Pressey Senior Classification Test (4: 23).

The measures of intelligence found in this study of Catholic high schools and those reported in the National Survey for general high schools and for all types of secondary schools except trade schools are presented in Table 3. The median intelligence quotients for Sophomores, Juniors, and Seniors in the Catholic high schools and in the general high schools are approximately the same, but the Freshmen in the Catholic schools are somewhat superior intellectually to those in the general high schools. Pupils in all grades in the former schools are more homogeneous than those in the latter group, the largest differences between the first and the third quar-

tiles being 15.5 for the Juniors in the Catholic schools, and the smallest for the general high schools being 20.0 for the Seniors. In all grades the pupils in the Catholic schools of this study are slightly superior to, and more homogeneous than, pupils in all types of schools (except trade schools) combined.

TABLE 3

MEDIAN INTELLIGENCE QUOTIENTS OF PUPILS IN TWENTY CATHOLIC HIGH SCHOOLS FOR BOYS, IN GENERAL HIGH SCHOOLS, AND IN ALL TYPES EXCEPT TRADE SCHOOLS

Measure	Catholic High Schools	General High Schools*	All Types except Trade Schools*
Grade IX:			
Median.....	105.7	103	99
First quartile.....	98.9	92	90
Third quartile.....	113.2	114	109
Number of pupils.....	713	736	1,643
Grade X:			
Median.....	105.7	105	101
First quartile.....	98.6	94	92
Third quartile.....	113.3	116	110
Number of pupils.....	645	935	2,906
Grade XI:			
Median.....	106.0	105	103
First quartile.....	97.8	95	94
Third quartile.....	113.3	116	112
Number of pupils.....	590	737	2,517
Grade XII:			
Median.....	106.7	107	105
First quartile.....	100.1	97	96
Third quartile.....	113.8	117	114
Number of pupils.....	624	643	2,054

* Kefauver, Noll, and Drake (4: 21).

EDUCATIONAL PLANS

Fifteen of the twenty-one Catholic high schools are located in cities having four-year colleges or universities; two are in suburban communities contiguous to large cities in which there are colleges and universities; two are in cities having junior colleges only; and two are in cities in which no recognized colleges are located. One of these cities without an institution of higher learning is within

twenty-five miles of St. Louis, in which there are colleges, and one has a branch of the Indiana University Extension. All graduates of these Catholic high schools can, therefore, pursue studies of a collegiate grade without leaving home.

The percentages of pupils expecting to go to college for the twenty-one schools and for the eleven general high schools, and also the percentages planning to enter other types of schools, are given in Table 4. Almost three-fifths of the Catholic high school boys intend

TABLE 4
PERCENTAGES OF BOYS IN TWENTY-ONE CATHOLIC HIGH SCHOOLS AND IN ELEVEN GENERAL HIGH SCHOOLS REPORTING PLANS TO ENTER DIFFERENT TYPES OF SCHOOLS AFTER THEY LEAVE THE SCHOOL IN WHICH THEY ARE ENROLLED

Type of School	Catholic High Schools	General High Schools*
College or university	56.2	51.4†
Private commercial school . .	2.0	6.1
Trade school	2.4	5.2
Evening school	1.5	4.1
Other types of schools	0.7	12.4

* Data derived by the writer from Kefauver, Noll, and Drake (3: 170).

† Includes percentages for normal schools and college-preparatory institutions.

to enter college, and slightly more than half the pupils in the general high schools expect to go to college. Pupils in the general high schools are, apparently, more aware of educational opportunities existing in other types of schools than are boys in the Catholic high schools, for more than one in four pupils in the general schools as compared to one in fifteen in the Catholic group plan to continue studying in some type of school on the secondary level. As the writer did not ask pupils specifically whether they intended to enter other schools than colleges and universities, the number who volunteered the information that they intended to enter some other school at the secondary level may not be representative of the number who plan to go to such schools. This supposition is borne out

by the fact that in six of the twenty-one schools 42.6 per cent of the graduates who did not go to college continued their education in some other type of secondary school (6: 295).

VOCATIONAL PLANS

Youth is proverbially optimistic, and this optimism is reflected in the vocational choices of high-school pupils. The "white-collar"

TABLE 5
PERCENTAGE DISTRIBUTION, ACCORDING TO
OCCUPATIONS THEY PLAN TO ENTER, OF
BOYS IN TWENTY-ONE CATHOLIC HIGH
SCHOOLS AND IN ELEVEN GENERAL HIGH
SCHOOLS

Type of Occupation	Catholic High Schools	General High Schools*
Owner.....	1.9	0.5
Profession.....	42.6	35.7
Managerial worker.....	1.1	1.3
Commercial service.....	8.2	3.7
Clerical service.....	8.4	5.3
Trades.....	9.3	8.9
Transportation.....	5.6	4.3
Public service.....	2.8	0.2
Personal service.....		
Labor.....	0.7	0.1
Others.....	3.7	0.5
No plans.....	15.7	39.4
Total.....	100.0	99.9

* Data adapted by the writer from Kefauver, Noll, and Drake (3: 172).

jobs, especially engineering and the other professions, appeal to boys. Madsen (5: 694), in an early study, found that 61 per cent of the boys in Omaha high schools named the professions as their choice of life-work. Williamson and Darley (7: 366-67) presented data which showed that, of Minnesota high school Senior boys who made occupational choices, more than half chose work commonly listed among professional callings and that engineering was the occupation chosen most frequently. Johnson (2) also found that approximately half the vocational choices of 4,376 boys in 78 high

schools in the state of Washington centered on the professions and that engineering accounted for a third of all vocational preferences.

Among boys of the twenty-one Catholic schools and of the eleven general high schools, the same preference for the professions is apparent, as shown in Table 5, although it is not so pronounced as in the case of boys in the studies cited. More than two-fifths of the boys in the Catholic high schools and more than a third of the boys in the general high schools aspire to the professional fields. Likewise the percentages of Catholic high school boys who chose commercial and clerical service are higher than the corresponding figures for boys in the general high schools. The percentages of pupils in both groups of schools who chose types of work classed as "manual" are relatively small in comparison with the percentages of those who chose the "white-collar" jobs.

The greatest difference between the two groups of schools from the point of view of occupational preference is in the percentages of boys who reported no vocational choices. Only 15.7 per cent of the boys in the twenty-one schools, as compared with 39.4 per cent in the general high schools, did not select a preferred type of work. Among Seniors in Minnesota high schools, about 40 per cent did not express vocational plans (7: 363), and, among boys in the high schools of Washington, more than 40 per cent did not mention an occupational preference (2: 183).

CONCLUSIONS

The differences in certain characteristics between the boys of the twenty-one Catholic high schools of this study and the pupils of eleven general high schools are not particularly marked or significant. Pupils of both groups of schools are much alike with respect to the country of birth of fathers and general intelligence. Compared with pupils of these public schools, the boys of the Catholic high schools are less selected from the standpoint of occupations of fathers; the percentage of boys who plan to enter college is slightly greater; and the percentage who have made definite vocational plans is greater. The vocational choices among pupils who expressed preferences for specific types of work exhibit, in general, marked correspondence.

In terms of the five characteristics considered in this article, the boys of these Catholic high schools are a normal sample of secondary-school pupils.

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SELECTED REFERENCES ON STATISTICS, THE THEORY OF TEST CONSTRUCTION, AND FACTOR ANALYSIS

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THE following bibliography has been selected from issues of educational and psychological journals from March, 1940, to February, 1941, inclusive. Sharp distinctions do not exist between the fields covered in this list, but, as an assistance to the student with special interests in one or more of the fields, the references have been classified under the following categories: theory and use of statistical methods, problems of test construction, and factor analysis. No articles dealing primarily with the use of tests have been included because these items are distributed functionally in other lists in the cycle, such as those dealing with secondary-school instruction, guidance, etc.

THEORY AND USE OF STATISTICAL METHODS¹

404. BABITZ, MILTON, and KEYES, NOEL. "A Method for Approximating the Average Interrelation Coefficient by Correlating the Parts with the Sum of the Parts," *Psychometrika*, V (December, 1940), 283-88.

A method is derived for approximating the average intercorrelation coefficient in connection with estimating test reliability by the average inter-item correlation.

405. CASANOVA, TEOBALDO. "Corrections to Correlation Coefficients on Account of Homogeneity in One Variable," *Journal of Experimental Education*, VIII (March, 1940), 341-45.

From the observed correlation for the total of a number of subgroups in which one of the variables is homogeneous (that is, the means and the standard deviations of the subgroups are equal), the author develops a formula to estimate the correlation that would be obtained if both groups were heterogeneous.

¹ See also Item 485 (Shen) in the list of selected references appearing in the September, 1940, number of the *Elementary School Journal*.

406. DUNLAP, JACK W. "Note on the Computation of Tetrachoric Correlation," *Psychometrika*, V (June, 1940), 137-40.
Gives directions for employing the International Business Machines tabulator or card-counting sorting machine to calculate the cell frequencies or percentage frequencies necessary in the computation of tetrachoric correlations.
407. DWYER, P. S. "The Evaluation of Multiple and Partial Correlation Coefficients from the Factorial Matrix," *Psychometrika*, V (September, 1940), 211-32.
Illustrates methods of employing factorial matrices to obtain approximations to partial- and multiple-correlation coefficients.
408. FERGUSON, GEORGE A. "The Application of Sheppard's Correction for Grouping," *Psychometrika*, VI (February, 1941), 21-27.
Employs empirical evidence to indicate the extent to which Sheppard's correction will affect the standard deviations and the correlation coefficients.
409. GODARD, R. H., and LINDQUIST, E. F. "An Empirical Study of the Effect of Heterogeneous Within-groups Variance upon Certain *F*-Tests of Significance in Analysis of Variance," *Psychometrika*, V (December, 1940), 263-74.
The authors apply the usual *F*-tests to data in which the criterion of homogeneity is not satisfied, in order to determine whether the *F*-tests are invalidated in such a situation.
410. GOODENOUGH, FLORENCE L., and MAURER, KATHARINE M. "The Relative Potency of the Nursery School and the Statistical Laboratory in Boosting the I.Q.," *Journal of Educational Psychology*, XXXI (October, 1940), 541-49.
The authors employ actual data to provide illustrations of certain fallacious statistical practices which they have noted in current reports.
411. HERRING, JOHN P. "The Measurement of Mental Growth," *Journal of Educational Psychology*, XXXI (December, 1940), 686-92.
Presents a method for measuring mental growth on the basis of the rate of change of mental level and discusses its advantages and disadvantages.
412. JACKSON, ROBERT W. B. *Applications of the Analysis of Variance and Covariance Method to Educational Problems*. Bulletin of the Department of Educational Research, No. 11. Toronto, Canada: Department of Educational Research, University of Toronto, 1940. Pp. 104.
Outlines the general principles underlying the method of analysis of variance and covariance and shows how the method may be applied to educational problems.
413. JACKSON, ROBERT W. B. "Some Pitfalls in the Statistical Analysis of Data Expressed in the Form of I.Q. Scores," *Journal of Educational Psychology*, XXXI (December, 1940), 677-85.

Describes and illustrates difficulties of interpretation of correlations which involve such measures as I.Q., E.Q., and A.Q.

414. LINDQUIST, E. F. *Statistical Analysis in Educational Research*. Boston: Houghton Mifflin Co., 1940. Pp. xiv+266.

The author states his purpose to be "to make more readily available . . . any of the more recent developments in statistical theory and practice which seem likely to prove of value in educational research." The principal topics treated include design of experiments, small-sample theory, and testing of statistical hypotheses.

415. LINDQUIST, E. F. "Sampling in Educational Research," *Journal of Educational Psychology*, XXXI (November, 1940), 561-74.

A discussion of fundamental principles of sampling, with suggestions for the improvement of sampling procedures in educational research.

416. MOSIER, CHARLES I. "A Modification of the Method of Successive Intervals," *Psychometrika*, V (June, 1940), 101-7.

Describes a scaling method which is shorter than the method of successive intervals.

417. PRESTON, MALCOLM G. "Concerning the Determination of Trait Variability," *Psychometrika*, V (December, 1940), 275-81.

Expressions are derived for the variance of n tests in an individual and the variance of N such variances. Related problems are suggested.

418. THOMSON, GODFREY H. "Weighting for Battery Reliability and Prediction," *British Journal of Psychology*, XXX (April, 1940), 357-66.

Derives a method for estimating the reliability of a test battery from the reliabilities of the single tests and their weights in the battery. Presents and illustrates numerically a method for calculating weights which yield maximum battery reliability.

419. TUCKER, LEDYARD R. "A Matrix Multiplier," *Psychometrika*, V (December, 1940), 289-94.

Outlines the use of the International Business Machines test-scoring machine, with a special device, for performing matrix multiplication.

420. WALKER, HELEN M. "Degrees of Freedom," *Journal of Educational Psychology*, XXXI (April, 1940), 253-69.

Makes an attempt "to state as simply as possible what degrees of freedom represent, why the concept is important, and how the appropriate number may be readily determined."

421. WHERRY, ROBERT J. "An Approximation Method for Obtaining a Maximized Multiple Criterion," *Psychometrika*, V (June, 1940), 109-15.

A new approximation method for obtaining a maximized multiple criterion is presented and compared with previous methods.

422. ZIEVE, LESLIE. "Note on the Correlation of Initial Scores with Gains," *Journal of Educational Psychology*, XXXI (May, 1940), 391-94.

Presents a simplification of the formula for the correlation of initial with gain scores.

PROBLEMS OF TEST CONSTRUCTION

423. BEDELL, RALPH. "Scoring Weighted Multiple Keyed Tests on the I.B.M. Counting Sorter," *Psychometrika*, V (September, 1940), 195-201.

Gives detailed instructions for employing the International Business Machines counting sorter for scoring weighted multiple-keyed tests, with special reference to Strong's Vocational Interest Blank for Women.

424. CALANDRA, ALEXANDER. "Scoring Formulas and Probability Considerations," *Psychometrika*, VI (February, 1941), 1-9.

Development of a general method of scoring objective examinations, based on Bayes's theorem of inverse probability. Owing to its complexity, the method is primarily of theoretical interest.

425. CARTER, HAROLD D., and CRONE, AILEEN P. "The Reliability of New-Type or Objective Tests in a Normal Classroom Situation," *Journal of Applied Psychology*, XXIV (June, 1940), 353-68.

An empirical study of the "effects of elimination of the least reliable components from examination material used in a college course."

426. CATTELL, RAYMOND B. "A Culture-free Intelligence Test I," *Journal of Educational Psychology*, XXXI (March, 1940), 161-79.

A detailed description of the construction of a perceptual test that should be applicable to primitive and civilized cultures.

427. DENNEY, H. R., and REMMERS, H. H. "Reliability of Multiple-Choice Measuring Instruments as a Function of the Spearman-Brown Prophecy Formula. II," *Journal of Educational Psychology*, XXXI (December, 1940), 699-704.

Report of a controlled experiment in connection with the problem introduced in the paper by Remmers, Karslake, and Gage (Item 436 of this list).

428. DRESSEL, PAUL L. "Some Remarks on the Kuder-Richardson Reliability Coefficient," *Psychometrika*, V (December, 1940), 305-10.

The Kuder-Richardson reliability coefficient (G. F. Kuder and M. W. Richardson, "The Theory of the Estimation of Test Reliability," *Psychometrika*, II [September, 1937], 151-60) is re-derived. Computation methods to be used with a calculating machine are suggested.

429. DUNLAP, JACK W. "Problems Arising from the Use of a Separate Answer Sheet," *Journal of Psychology*, X (July, 1940), 3-48.

Presents the details of a series of experiments "to determine the effect on the reliability and validity of test results, of the use of the separate answer sheet, particularly the type designed to be used with the electric test-scoring machine."

430. GIBBONS, CHARLES C. "The Predictive Value of the Most Valid Items of an Examination," *Journal of Educational Psychology*, XXXI (November, 1940), 616-21.
An experimental investigation of the relation between scores on an examination and scores based on only the most valid items of the examination.
431. GUILFORD, J. P. "The Phi Coefficient and Chi Square as Indices of Item Validity," *Psychometrika*, VI (February, 1941), 11-19.
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432. HOFF, ARTHUR G. "A Study of the Honesty and Accuracy Found in Pupil Checking of Examination Papers," *Journal of Educational Research*, XXXIV (October, 1940), 127-29.
Investigates accuracy of pupil checking of objective-type examinations.
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Outlines steps for the calculation of a variant of the Kuder-Richardson formulas for test reliability (G. F. Kuder and M. W. Richardson, "The Theory of the Estimation of Test Reliability," *Psychometrika*, II [September, 1937], 151-60).
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435. MUNSON, GRACE; SAFFIR, MILTON A.; and CHAMNESS, HELEN U. "An Objectified Practical Test for Clinical Psychologists," *Journal of Educational Psychology*, XXXI (March, 1940), 215-22.
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437. RICHARDSON, M. W. "The Logic of Age Scales," *Educational and Psychological Measurement*, I (January, 1941), 25-34.
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438. ROYER, ELMER B. "A Machine Method for Computing the Biserial Correlation Coefficient in Item Validation," *Psychometrika*, VI (February, 1941), 55-59.
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439. SHEN, EUGENE. "Note on the Scoring of Matching Tests," *Journal of Educational Psychology*, XXXI (November, 1940), 625-26.
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FACTOR ANALYSIS

440. CRAWFORD, A. B. "Some Observations on the Primary Mental Abilities Battery in Action," *School and Society*, LI (May 4, 1940), 585-92.
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444. GUTTMAN, LOUIS. "Multiple Rectilinear Prediction and the Resolution into Components," *Psychometrika*, V (June, 1940), 75-99.
Derives formulas for multiple and partial correlation of tests and for the estimation of factor scores from test scores, all in terms of the factors of any orthogonal factor solution.
445. HARSH, CHARLES M. "Constancy and Variation in Patterns of Factor Loadings," *Journal of Educational Psychology*, XXXI (May, 1940), 335-59.
A discussion, based on a number of published factor studies, of "the reliability of 'primary' factors or of simple rotated factor patterns, and the possible sources of their variation."

446. HOLZINGER, KARL J. "A Synthetic Approach to Factor Analysis," *Psychometrika*, V (December, 1940), 235-50.
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448. SPEARMAN, C. "Is Ability Random or Organized?" *Journal of Educational Psychology*, XXXI (April, 1940), 305-10.
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449. STALNAKER, JOHN M. "Results from Factor Analysis with Special Reference to 'Primary Mental Abilities,'" *Journal of Educational Research*, XXXIII (May, 1940), 698-704.
A plea for improvement in the design of tests for use in factor-analysis studies.
450. TUCKER, LEDYARD R. "The Role of Correlated Factors in Factor Analysis," *Psychometrika*, V (June, 1940), 141-52.
A theoretical discussion of the properties and meaning of correlated factors.
451. WOLFE, DAEL. *Factor Analysis to 1940*. Psychometric Monographs, No. 3. Chicago: University of Chicago Press, 1940. Pp. viii+70.
A general review with emphasis on "the general logic, the chief results, and the limitations and uses of factor analysis." Includes a bibliography of 530 items published since 1928.
452. YOUNG, GALE. "Maximum Likelihood Estimation and Factor Analysis," *Psychometrika*, VI (February, 1941), 49-53.
Applies Fisher's method of maximum likelihood to the problem of estimation in factor analysis.

Educational Writings

*

REVIEWS AND BOOK NOTES

A REALISTIC APPROACH TO VOCATIONAL EDUCATION.—Magill's treatment of the administration of vocational education¹ is presented in seven parts: the philosophy, the program, the staff, the instruction, the pupil, the results, and a summary.

In the discussion of the philosophy of vocational education, the author reviews briefly the place of vocational education in the field of general education and distinguishes sharply between those programs which are appropriate to well-conceived plans of general education and those which involve specialized training for employment. He raises the important question whether it is justifiable to train workers at the expense of the general taxpayer unless the procedure is proved beneficial to all concerned.

In the evaluation of the program, the writer emphasizes the importance of examining critically all phases of vocational education, such as high-school exploratory courses; the use of interested groups for obtaining advice; and the limitations and the advantages of employment training which includes training for employment in industry, in offices, and in retail stores. He insists that vocational programs should be organized only after thorough surveys made by competent persons have shown the need for such courses.

In the chapter devoted to the selection of the staff, he points out that vocational teachers should possess the same personal qualities and professional attainments as those required of academic teachers. He states what he considers should be the required personal and professional qualifications of the director of vocational education, the vocational principal, the co-ordinator, the shop instructor, the instructor of the related subjects, and the instructor in general education.

In the part devoted to instruction, Magill differentiates between broadly and narrowly trained workers. The objectives of all training must be approved by employers, foremen in the field, labor leaders, and specialists in industrial relations. Suggestions are offered on various types of instruction.

Which pupils shall be selected for training? The author discusses the shortcomings of the selection of pupils in the United States and enumerates the important factors involved in selection, such as intelligence, special aptitude, in-

¹ Walter H. Magill, *Administering Vocational Education*. Guide to Action Series, No. 1. Minneapolis, Minnesota: Educational Publishers, Inc., 1941. Pp. xii+118. \$1.60.

terest, and personality traits. He suggests that those who fail to meet the requirements should be transferred to more suitable curriculums.

In his discussion of the results of the program, he raises questions concerning the objectives which should dominate vocational education. Will the vocational graduates contribute more effectively to our social life? Are they more happily and successfully adjusted to life?

In the final summary the principal points are listed in a series of questions emphasizing the importance of vocational guidance and vocational education in the general-education program.

"Perfect timing" is almost the only phrase that could be used in emphasizing the importance to all educators of a reading of this valuable monograph. When our country is at the hysteria stage in its demand for every type of skill for national defense, when the schools are called on to co-operate by providing buildings, teachers, and machines for training all types of workers, a person who has been familiar with vocational education in all its phases presents a point of view that is practical and clear and is written in a language understandable to all.

The reviewer's only criticism is that the book is too short to give effective help to the administrator who would benefit by these suggestions. The author could have elaborated on the methods that should be used in the selection of pupils, teachers, and tests and in conducting surveys; he has taken it for granted that all educators have a sufficient background to make use of the suggestions without detailed directions.

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SELF-IMPROVEMENT IN READING.—To improve the reading achievement of every pupil—the retarded, the average, and the superior reader—is the broad base of the program which Knight and Traxler propose for the junior and the senior high schools.¹ Historically the teaching of reading was introduced into the secondary school as a *remedial* process when educators suffered the shock of discovering that many high-school pupils were reading far below their grade levels. Continued studies of reading-test scores, however, indicate both the possibility and the desirability of improving the reading achievement of all pupils. Therefore, through self-stimulus, self-analysis, and self-appraisal, the authors of *Develop Your Reading* present to all secondary-school pupils a challenge and a system.

On the assumption that the most effective approach to any reading program

¹ Pearle E. Knight and Arthur E. Traxler, *Develop Your Reading*, pp. viii+376, \$1.36; *Workbook for Pupils Using "Develop Your Reading,"* pp. 48; *Teachers' Manual and Answer Key for "Develop Your Reading,"* pp. 36. Boston: Little, Brown & Co., 1941.

lies in the pleasure to be found in leisure-time reading, chapter i whets the appetite of the young reader with tempting samples selected for the express purpose of helping him to find fun in books. A thrilling adventure, a human-interest story, the astonishing feats of a trained police dog, a tall tale, and the exciting story of the dangers and difficulties of sky-writing offer a sufficient variety of appeal to win the interest of high-school pupils. As a further stimulus to voluntary reading, helpful recommendations are made through suggestive one-line book reviews. The book then moves on to attack two fundamental phases of adapting methods of reading to the material and to the reader's immediate purpose, "Rapid Reading" and "Close Reading," with the basic skills essential to development in both. Through pretests, exercises, and achievement tests, all self-administered, the pupil is helped to accelerate his rate of reading, to develop speed and accuracy in practical applications of the skimming process, to find help in a dictionary, and to increase his knowledge and use of words. He is made conscious of the essential factors in effective organization of thought by exercise in the discovery of the main idea and the search for supporting details. Finally, his ability to appreciate is quickened by directed visualization of what he reads and by stimulated participation in the emotional experiences of the writers. The authors' conviction that oral reading involves valuable techniques both of diagnosis and instruction leads them to include a unit in oral reading, which will shatter the silence of general practice and of prescribed procedures, to the delight of many teachers and pupils. The book closes with a comprehensive review which aims to be far more than a repetition of the work done. It is planned to reveal and to emphasize the interdependence of the units studied and the skills developed and to give to the pupils an encouraging feeling of growth.

There is no question about the "gentle reader" for whom this book is written. "To the Student" the Introduction addresses its statement of the big and vital part which reading plays in the life of the average person. To the student each chapter offers its message, not in the form of prescription nor obligation, but rather as revealed need and timely help. To the student the interesting final page directs its "Notes about the Making of This Book," giving some important facts of format seldom found in a school textbook. Certainly the youthful reader is the determining factor in the selection of the magazine articles, the stories, and the poems presented for practice. Witness the range and variety of their appeal: "The Angel of the Crimea," "The Race for the Pole," "Circus," "Pigeon Sends Help," "A Curious Fire." The excellent photographs which enliven the pages were surely chosen to capture the attention of high-school boys and girls: the streamlined Silver Meteor, the impressive Lincoln Memorial, a big-league baseball team, the loading of circus cars, and the popular Charlie McCarthy.

For the teacher whose task in the past has been made more difficult by the lack of adequate work materials, the abundance of suitable and stimulating

selections found in *Develop Your Reading* makes this compact volume a particularly convenient book. The scope and the supply of materials needed for illustration and exercise in the development of proposed reading skills have caused the authors to draw upon newspapers, magazines, dictionaries, encyclopedias, almanacs, popular novels, and well-known poetry. Practice in skimming calls for reprints of statistics from the *World Almanac* and a week's radio program from the *New York Times*. The introduction of the dictionary requires reprints from five standard dictionaries. *Scholastic*, the American High-School Weekly, furnishes samples of radio skits and original dramatizations.

To facilitate the pupils' use of the textbook, the authors provide a workbook for class use. Care should be taken, warn the authors, to see that the workbook does not become a substitute for teaching, but there is reason to fear that its characteristic pages of blanks waiting for written answers, which, hopefully, are to be provocative of oral discussion, may not escape this danger. For the teacher the most valuable feature of the workbook is the perforated individual-record form, which may be removed and kept on file as a brief case history, as well as a cumulative record of the pupil's progress. For the pupil a final page is added to hold a report of voluntary reading and a graphic presentation of the number of pages read.

A significant supplement to the textbook and the workbook is the *Teachers' Manual and Answer Key*. It offers specific directions for administering the tests of reading rate and comprehension and for scoring the results. It furnishes a simple code for indicating errors in the oral-reading test, with an illustration of the application of the code, and includes a list of stories and poems which have been used with marked success in oral reading at the high-school level. The manual concludes with a bibliography of selected references on methods of teaching reading, on tests and diagnostic devices in high-school reading, and selected supplementary reading material for high-school use.

In an attractive, compact textbook, between the covers of which is compiled a reference library of suitable work materials for pupil and teacher, Knight and Traxler have made a unique contribution to the teaching of reading at the secondary-school level. Through careful study, supported by sound experience, they now turn the attention of the teacher toward a program of developmental rather than remedial procedures and thus offer to each young reader of high-school age opportunities for growth in those basic skills closely related to the many interests and activities of daily living.

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READING READINESS IN THE LITERATURE PROGRAM.—In keeping with the current practice of providing extensive reading in the literature classes and of including modern and meaningful literary selections, a new series of anthologies

has recently been published. Because of the nature and treatment of the material, two books in this series¹ are significant contributions to the field.

Selections have been carefully chosen and so presented as to be of interest to adolescents. As the editors point out in the Preface to each volume, no material can be meaningful until the pupil is prepared to read it. Much attention, therefore, has been paid to preparing the pupil for his experiences with the printed page so that he enjoys and understands it. In a twelve-page foreword to *New Frontiers*, Louis Zahner, in a most engaging and informal manner, analyzes with the pupil the means for increasing his powers of comprehension and points out that reading extends intellectual frontiers only when the pupil understands what he reads.

The selections in both books are so chosen and arranged that the easier reading comes first and is followed by material progressively more difficult in both form and content. In *Romance*, selections are divided into nine types: (1) "The Short Story," (2) "Narrative Poetry," (3) "The Essay," (4) "The One-Act Play," (5) "The Novel," (6) "Epic Poetry—Idylls of the King," (7) "The Biography," (8) "Lyric Poetry," and (9) "The Drama." *New Frontiers*, for somewhat less mature readers, follows a similar plan of organization, omitting only the section on epic poetry.

Adopting a rather liberal attitude in their definition of "literature," the editors have included such titles as Ralph Henry Barbour's "Hungry Hero," P. G. Wodehouse's "Pig-Hoo-o-o-o-ey!" Dorothy Canfield Fisher's "The Bedquilt," and Zane Grey's "Don." Since the reading is planned for ever increasing maturity and difficulty, the content ranges from these simple short stories to the comparatively difficult poems of E. A. Robinson's "The House on the Hill," Ralph Waldo Emerson's "Something Sings," and Thomas Hardy's "Waiting Both." Modern writers, such as Hamlin Garland, Stephen Vincent Benét, Emily Dickinson, Robert Frost, and Arthur Guiterman, are more widely represented than are the older men like Scott, Herrick, Wordsworth, and Keats. Although the selections are arranged according to types, the variety of material, both modern and classical, provides ample opportunity for a study of literature via other methods of approach.

An especially noteworthy feature is the handling of illustrative material. In addition to numerous explanatory diagrams, sketches, and pictures, the books employ two novel devices. At the beginning of each division the motion-picture technique of photomontage has been used to provide introduction and background—one more detail in the general pattern of reading readiness. An even more valuable and unusual feature is the inclusion of formal teaching aids treated through pictures. Exercises entitled "Using Your Eyes" are provided

¹ Literature in the Senior High School: *New Frontiers* edited by Thomas H. Briggs, Lucile Prim Jackson, Emma Miller Bolenius, and Max J. Herzberg, pp. xxviii+680+iv, \$1.92; *Romance* edited by Thomas H. Briggs, Max J. Herzberg, Lucile Prim Jackson, and Emma Miller Bolenius, pp. xii+732+ii, \$2.00. Boston: Houghton Mifflin Co., 1940.

at the end of each section. These exercises are of many kinds. For instance, a simple mystery story told in pictures tests the pupil's ability to read and observe carefully and to make logical deductions. Other pictures suggest specific selections but omit certain important details which the pupil must discover, and still others present obvious inaccuracies. Further activities include matching a phrase to the appropriate picture, identifying characters, and explaining what is going on. It is the editors' contention that, in order to "carry out these graphic assignments successfully, a pupil must read with exactness and must have received a meaningful experience. Such exercises also help to prevent a pupil from receiving the idea that a vague impression is all one can expect to receive from figurative language" (*Romance*, p. ix).

To the teacher in search of new material with a stimulating approach, these books will be of genuine value and interest.

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A NEW ROAD TO HIGH-SCHOOL HISTORY.—The work under review¹ is a streamlined textbook in American history designed for pupils of Grades XI and XII who are not preparing to enter college. The want which the authors expect the book to supply is best put by a quotation: "A primary purpose of this book is to develop, without chauvinism, the three-hundred-year background of the democratic ideal in America in order that our youth may have an abiding faith in the values of democracy and a positive resolve to add to the realities of those values" (p. xv). The authors think that no stone should be left unturned to give youth a full realization of what democracy means, and they say further that the planning and the writing of the volume were governed by criteria derived in part from experience and in part from the writings of recognized theorists in this new field. Among the criteria guiding them, they place functionalism first; the unit system second; and then simplification, interest, and learning through activities—especially reading from the widely selected list of books named by the authors. They also call attention to the wealth of illustrations employed as teaching means.

To accomplish the desired ends, the authors develop ten major concepts: immigration and settlement, democratic government, the frontier, agriculture, industry, labor, the American way of life, social history, foreign affairs, and the New Deal. In order not to repeat the content of junior high school history, the makers of this book concern themselves mainly with values and omit "irrelevant facts." They make it clear that they are writing history from the standpoint of the present day, and to this end they include allied material from other social studies. In order to vitalize the book for the average pupil, they attempt to minimize the reading difficulties by supplying a great variety of educational

¹ Harold Underwood Faulkner, Tyler Kepner, and Hall Bartlett, *The American Way of Life: A History*. New York: Harper & Bros., 1941. Pp. xviii+738. \$2.20.

equipment in such sections as "Can You Speak the Language of History?" "Information, Please!" "We Learn by Doing," "We Read from Other Books," "Leading Actors in the Drama," "Try a Historical Novel," "Through the Eyes of the Camera," and "Summary Exercises."

The authors achieve many of their proposed aims. They make an effort to teach the pupil through activities which emphasize present-day values. They employ illustrations and questions appropriately and draw largely on graphic statistics and contemporary cartoons. A foreword to each chapter singles out the most salient features, and an excellent topical treatment elaborates them. A discussion rather than a narrative clinches the arguments. Each unit provides each member of the class with abundant work: making graphs, setting up debates, drawing cartoons, and reading other histories and biographies and historical novels—all necessary "gadgets" of learning. All this equipment is good, and more than good, even excellent.

There is more to the good. The technical language of the historian is largely done away with; instead, popular and appealing phrases are employed. The book is not called "History of the United States" or "Rise of the American People," but a fresher, currently used expression is chosen—"The American Way of Life: A History." Where the authors might have called a chapter "Immigration," they have preferred to say, "America, Blessed by Nature, Becomes the Cross-Roads of the World's Peoples." The chapter on labor is titled "The American Worker Struggles for a Square Deal." Dates are sparingly used, but it is doubtful whether this practice is a blessing in a history textbook.

Now for the less favorable points. This book is a series of essays, each topic largely divorced from each and all of the others and carried through for the whole period of our history. The word "democracy" is too abundantly used, and its meaning is too often changed. Furthermore, things are called "democratic" and "undemocratic" from the point of view of the present rather than that of the far past of our life. The pupil may fail, therefore, to get a well-organized and well-unified treatment of the historical events which he should know. Specifically, there is a choppy and incomplete treatment of such vital topics as the American Revolution, the Civil War, the reconstruction period, the World War, and the New Deal. The units are hardly consistent, and, even if they were, it seems to be carrying the unit method very far to head a section: "Madison and Wilson [there are nearly a hundred years between their administrations] Fail To Keep the Nation Neutral When Europe Goes to War." Actually the case is worse, for the section begins with John Adams and his policies in 1797—a spread of 116 years. This plan compels the authors to take up the Monroe Doctrine after they have treated the World War.

It is not necessary to explain every term that presents any degree of difficulty. Pupils have vocabularies, and there are dictionaries, and eleventh- and twelfth-grade pupils have a fairly good range of language, as the "Quiz Kids" have proved.

Another unpleasant feature of the book is a too great use of generalization

at points where it would have been far better to be specific. On page 76, for example, the authors speak of "a great English political leader" when they would have done better to say "Gladstone," whom they doubtless have in mind. In discussing the "War Amendments," they so simplify the whole matter that they give a completely wrong conception of how the amendments were adopted and why they were not kept. The fact that they were passed in the fervor and hate of the period of reconstruction is the key to their failure; they were the product of war hysteria. Generalization has another result. In the discussion of the frontier, the authors, so far as the present reviewer has discovered, do not once mention Turner, and yet on page 156 they had an excellent opportunity to mention the great teacher of the significance of the frontier in our American expansion. A notable awkwardness occurs on pages 284-85, where the Payne-Aldrich tariff is omitted in the catalogue of objectionable measures when, as a matter of fact, it was more disappointing to believers in tariff reform than was the Dingley or any other tariff whatever. The omission, however, is partly atoned for by strictures upon this objectionable tariff on page 456-171 pages out of context.

The reviewer does not forget that the textbook here considered is not intended for pupils preparing for college but is intended rather to give a new approach to American history. This aim it fulfils in a striking and engaging manner. Since the book has in large measure achieved its declared purpose, one must not labor minor deficiencies. To the makers of textbooks the gods do not grant perfection.

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MATHEMATICS APPLIED TO EVERYDAY LIFE.—In the junior high school the functional aspect of subject matter is receiving attention in the program in mathematics as well as in other fields. A recent series of textbooks¹ stresses this functional aspect through a wide variety of topics involving the application of mathematics, particularly arithmetic.

The authors believe that it is good psychology and economical pedagogy to observe the logic inherent in the subject by organizing the chapters around mathematical principles or topics, where that can be done, instead of around fields of application or broad problems. This organization is more in evidence in Book I, in which occur chapter headings such as "How We Use Common Fractions in Life" and "Measuring Areas and Surfaces" along with "Mathematics and Communication," than in Books II and III. In the latter books fields of applica-

¹ Harl R. Douglass and Lucien B. Kinney, *Junior Mathematics*: Book I, pp. viii+440, \$0.96; Book II, pp. viii+440, \$1.04; Book III, pp. viii+504, \$1.28. New York: Henry Holt & Co., 1940.

tion appear more frequently as chapter headings, for example, "How We Use the Bank," "Providing for Economic Security," etc.

The mathematical content in Books I and II is similar to that found in other series for these grades except that less algebra and geometry are introduced and more emphasis is placed on social content involving applications of arithmetic than is true in many current textbooks. Book III continues to stress the applications of mathematics, particularly in social situations, and at the end presents a chapter entitled "What Algebra Is, and Some of Its Uses" and another on "What Geometry Is Like." The latter gives an introduction to deductive proof. One chapter is also devoted to statistical methods. This particular series is designed for pupils who expect to study algebra in Grade X.

The books have several desirable features. Extensive provision for drill and for maintenance of processes learned is made through practice tests, review exercises, chapter tests which include information and vocabulary as well as fundamental principles and processes, and inventory tests interspersed through the various chapters. The last chapter of each book presents a diagnostic and remedial program. Extensive provision is made for practice in problem-solving, and problem scales are included at intervals. The richness of the series in situations in which mathematics is used is perhaps its strongest feature. Many actual photographs and good drawings and illustrations give the books an attractive appearance.

Certain other characteristics of the books are open to question. Little provision is made for developing gradually and maintaining the pupils' understanding of the simplest ideas of algebra. In the Preface of Book I the authors refer to their gradual introduction of the concept of literal number, but aside from the ordinary use of formulas no algebraic ideas appear until Book III, where they are confined largely to chapter x. Then the pupils' introduction to literal numbers is rather unfortunate. When formulas are presented, the letters are referred to as initial letters of certain words used to save time in writing rules. This idea is erroneous and troublesome and must be discarded later. The idea that a literal number is a *number* is not stressed.

In the development of a new topic, such as finding the circumference of a circle or the area of a parallelogram, the general procedure followed is that of giving the rule and formula first, followed in some cases by further explanation and then examples for the pupils to solve. This deductive approach to new topics is rather generally considered poor pedagogy. Finally the books are rather weak in the attention given to the introduction and the development of new concepts. As an extreme example, the authors define perpendicular lines as straight lines that intersect at right angles when the concept of neither angle nor right angle has been developed previously. Experience with children indicates that teachers cannot successfully assume that pupils intuitively know the meanings of such terms. When the textbook in use allows such omissions, the teacher must be unusually alert to detect them and make provision for them if the classwork is to go smoothly.

This series of three books with some slight changes is also published under different covers and titles.¹ In schools which divide the pupils at the beginning of Grade IX, allowing part of them to study algebra and offering the others a more elementary course concerned largely with applications of arithmetic in social situations (which for many pupils may be a terminal course in mathematics), the authors recommend this series of books in preference to *Junior Mathematics*. The first two books of the two series have practically the same content, but there are some differences in the third book. In *Everyday Mathematics* all algebra and geometry are omitted, except the use of formulas and areas and volumes of geometric figures, and a chapter entitled "Mathematics in Providing a Home" is added.

Teachers and administrators differ in their opinions regarding the most desirable content of a ninth-grade course in mathematics for pupils not academically inclined. Some believe that the elementary ideas and concepts of algebra and informational geometry are a vital part of such a course, along with applications of mathematics in a variety of social situations. Others believe that the entire course should deal with applications in social situations of mathematics no more advanced than that usually taught in Grades VII and VIII. Teachers who hold the latter view will be particularly interested in examining *Everyday Mathematics*.

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CURRENT PUBLICATIONS RECEIVED

GENERAL EDUCATIONAL METHOD, HISTORY, THEORY AND PRACTICE

Arithmetic in General Education. The Final Report of the National Council Committee on Arithmetic. Sixteenth Yearbook of the National Council of Teachers of Mathematics. New York: Teachers College, Columbia University, 1941. Pp. xii+336. \$1.25.

BOLTON, FREDERICK E., and CORBALLY, JOHN E. *Educational Sociology*. New York: American Book Co., 1941. Pp. xvi+632. \$3.00.

BRYSON, LYMAN. *The New Prometheus*. The Kappa Delta Pi Lecture Series. New York: Macmillan Co., 1941. Pp. x+108. \$1.00.

COLSON, EDNA MEADE. *An Analysis of the Specific References to Negroes in Selected Curricula for the Education of Teachers*. Teachers College Contributions to Education, No. 822. New York: Teachers College, Columbia University, 1940. Pp. x+178. \$2.00.

¹ Harl R. Douglass and Lucien B. Kinney, *Mathematics for Today*: Book I, pp. viii+438, \$0.96; Book II, pp. viii+448, \$1.04; *Everyday Mathematics*, pp. viii+504, \$1.28. New York: Henry Holt & Co., 1940.

- Education for Family Life*. Nineteenth Yearbook of the American Association of School Administrators. Washington: American Association of School Administrators, 1941. Pp. 368. \$2.00.
- ELY, SISTER AIMEE. *The Youth Problem and the Education of the Catholic Girl*. Washington: Catholic University of America Press, 1941. Pp. xx+136.
- LORWIN, LEWIS L. *Youth Work Programs: Problems and Policies*. Prepared for the American Youth Commission. Washington: American Council on Education, 1941. Pp. xii+196. \$1.75.
- REEDER, WARD G. *The Fundamentals of Public School Administration*. New York: Macmillan Co., 1941 (revised and enlarged). Pp. xvi+798. \$3.75.
- SAUNDERS, CARLETON M. *Promotion or Failure for the Elementary School Pupil?* New York: Teachers College, Columbia University, 1941. Pp. viii+78. \$1.25.
- SUTTON, RACHEL S. *The Education of Teachers for the Elementary Schools of Georgia*. Athens, Georgia: University of Georgia Press, 1941. Pp. xii+278. \$2.00.
- WARNER, W. LLOYD; JUNKER, BUFORD H.; and ADAMS, WALTER A. *Color and Human Nature: Negro Personality Development in a Northern City*. Prepared for the American Youth Commission. Washington: American Council on Education, 1941. Pp. xvi+302. \$2.25.

BOOKS PRIMARILY FOR HIGH-SCHOOL TEACHERS AND PUPILS

- Basic Social Education Series: *America's Minerals* by Katherine Glover, pp. 48, \$0.32; *Ashkee of Sunshine Water, a Navaho Indian Boy* by Faith Hill and Mabel F. Rice, pp. 36, \$0.28; *Buried Sunlight: The Story of Coal* by Raymond E. Janssen, pp. 36, \$0.28; *Daily Bread and Other Foods* by Ruth Brindze, pp. 36, \$0.28; *Fire-Fighters: The Story of Fire Protection, Past and Present* by Helen Mitchell, pp. 36, \$0.28; *The Motor Car in American Life* by Curtis Fuller, pp. 48, \$0.32; *New England Colonial Days* by Marcelle Laval Duffe, pp. 36, \$0.28; *Our American Forests, Yesterday, Today, Tomorrow* by Katherine Glover, pp. 48, \$0.32; *Prairie Children* by Gina Allen, pp. 36, \$0.28; *A Primer of Economics* by Stuart Chase, pp. 60, \$0.40; *Soil, Water, and Man* by Murl Deusing, pp. 48, \$0.32; *Story of Democracy* by Harriet Bunn, pp. 36, \$0.28. Evanston, Illinois: Row, Peterson & Co., 1941.
- COULTER, SALLY. *Footlight Fun: A Book of Plays for Grades Six to Ten*. New York: Silver Burdett Co., 1941. Pp. viii+216. \$2.36.
- DAVEY, MILDRED A., SMITH, ELIZABETH M., and MYERS, THEODORE R. *Everyday Occupations*. Boston: D. C. Heath & Co., 1941. Pp. xii+372. \$1.68.
- DISRAELI, ROBERT. *Uncle Sam's Treasury*. Boston: Little, Brown & Co., 1941. Pp. 122. \$1.25.
- JANZEN, CORNELIUS C., and STEPHENSON, ORLANDO W. *Everyday Economics*. New York: Silver Burdett Co., 1941 (revised). Pp. x+520+x. \$1.88.
- MASELLA, ARISTIDE B. *Le Avventure di Giovanni Passaguai*. New York: Henry Holt & Co., 1941. Pp. xii+162+xxviii. \$1.12.

Music, the Universal Language. Edited by Osbourne McConathy, Russell V. Morgan, and George L. Lindsay. New York: Silver Burdett Co., 1941. Pp. 300. \$1.92.

New World Neighbors: *Letters from Guatemala* by Delia Goetz, pp. 56; *Kimbi, Indian of the Jungle* by Henry Lionel Williams, pp. 48; *Around the Caribbean* by Nora Burglon, Thelma Glazer, and E. Mark Phillips, pp. 48; *Exploring the Jungle* by JoBesse McElveen Waldeck, pp. 56; *The Gaucho's Daughter* by Katherine G. Pollock, pp. 56; *Riches of South America* by V. Wolfgang von Hagen, pp. 56; *Boys of the Andes* by Alice Desmond, Alida Malkus, and Ednah Wood, pp. 56; *Along the Inca Highway* by Alida Malkus, pp. 56. Boston: D. C. Heath & Co., 1941. \$0.32 (each).

O'ROURKE, L. J. *Your Government Today and Tomorrow.* Boston: D. C. Heath & Co., 1941. Pp. xx+710. \$1.84.

Our Freedoms Series: *Fair Trial* and *Religious Liberty* by Chester S. Williams. Evanston, Illinois: Row, Peterson & Co., 1941. Pp. 72 (each). \$0.48 (each).

PARKER, BERTHA MORRIS. The Basic Science Education Series: *The Air about Us*; *Birds* (checked for scientific accuracy by Arthur A. Allen); *The Earth, a Great Storehouse* (checked for scientific accuracy by Margaret Terrell Parker); *Fire; Fire, Friend and Foe* (checked for scientific accuracy by Clifford Holley); *Insect Societies* (by Bertha Morris Parker and Alfred E. Emerson); *Light* (checked for scientific accuracy by Clifford Holley); *Our Ocean of Air* (checked for scientific accuracy by Clifford Holley); *Spiders* (checked for scientific accuracy by Alfred E. Emerson); *Trees* (checked for scientific accuracy by Wilbur R. Mattoon). Evanston, Illinois: Row, Peterson & Co., 1941. Pp. 36 (each). \$0.28 (each).

Poems for a Machine Age. Selected and edited by Horace J. McNeil, with the editorial collaboration of Clarence Stratton. New York: McGraw-Hill Book Co., Inc., 1941. Pp. xx+568. \$1.60.

STEWART, OSCAR M., and CUSHING, BURTON L. *Physics for Secondary Schools.* Boston: Ginn & Co., 1941 (revised). Pp. viii+760. \$1.80.

THOMAS, CHARLES SWAIN; PAINE, MYRA ADELINE; and ENSWEILER, NELLE GLOVER. *English for Junior Americans*: Book I, pp. viii+344, \$1.08; Book II, pp. x+404, \$1.12. New York: Longmans, Green & Co., 1941.

PUBLICATIONS IN PAMPHLET FORM

BRAINARD, ALANSON D., with the assistance of KNUTE O. BROADY, MERTON G. FARROW, LEO M. HAUPTMAN, CLIFFORD J. IRELAND, E. LYLE MILLER, VICTOR P. MOREY, and JAMES R. VEACH. *Handbook for School Custodians.* Contributions to Education, No. 16. University of Nebraska Publication No. 137. Lincoln, Nebraska: University of Nebraska, 1941 (revised). Pp. viii+170. \$1.00.

BROWNELL, WILLIAM A., with the assistance of ROY A. DOTY and WILLIAM C. REIN. *Arithmetic in Grades I and II: A Critical Summary of New and Previously Reported Research.* Duke University Research Studies in Education,

- No. 6. Durham, North Carolina: Duke University Press, 1941. Pp. xii+176. \$1.50.
- CLARK, W. W. "Undergraduate Training for Extension Workers." Extension Service Circular 350. Washington: Extension Service, United States Department of Agriculture, 1941. Pp. 4 (mimeographed).
- Contributions of Supervised Correspondence Study to Education.* Proceedings of the National Conference on Supervised Correspondence Study, No. 2, 1941. Lincoln, Nebraska: Teachers College and University Extension Division, University of Nebraska, 1941. Pp. 48.
- FOSDICK, RAYMOND B. *The Rockefeller Foundation: A Review for 1940.* New York: Rockefeller Foundation, 1941. Pp. 64.
- GRUENER, JENNETTE R. *Feeble-minded Children as a Massachusetts Problem.* Boston: Massachusetts Child Council (41 Mount Vernon Street), 1941. Pp. 64.
- MANUEL, HERSCHEL T. *Adjusting Education to the Needs of Youth.* Research Bulletin of the Texas Commission on Coordination in Education, No. 13. Austin, Texas: Administrative Board of the Texas Commission on Coordination in Education, 1941. Pp. 24.
- Missouri at Work on the Public School Curriculum: Secondary School Series: Bulletin 3A (1941), *Language Arts: General English*, pp. 424; Bulletin 3B (1941), *Language Arts: School Publications and Speech*, pp. 142; Bulletin 7B (1941), *Practical Arts: Industrial Arts Handbook*, pp. 158; Bulletin 7D (1941), *Practical Arts: General Agriculture*, pp. 110; Bulletin 8C (1941), *Fine Arts: Literature and Dramatics*, pp. 164. Jefferson City, Missouri: Lloyd W. King, State Superintendent of Public Schools.
- The Ninth Yearbook of School Law, 1941.* Edited by M. M. Chambers. Washington: American Council on Education, 1941. Pp. viii+200. \$1.00.
- Physically Handicapped Children in New York City.* General Report of the Committee for the Study of the Care and Education of Physically Handicapped Children in the Public Schools of the City of New York. Prepared for the Committee by Harold W. McCormick, assisted by Fred F. Beach, Lyman C. Duryea, Robert T. Rock, and Ira S. Wile. New York: Board of Education of the City of New York, 1941. Pp. xii+92.
- Psychological Tests and Their Uses.* Review of Educational Research, Vol. XI, No. 1. Washington: American Educational Research Association, 1941. Pp. 132. \$1.00.
- Safety Education Projects: *I Teach Sociology; Shop Talk; So You Are Parents; So You Teach Art; We English Teachers; We Teach General Science; Yes, I Teach Home Economics; You, Too, Teach Civics?* Washington: Research Division, National Education Association, 1941. Pp. 4 (each). \$.05 (each).
- SMITH, HENRY LESTER, and EATON, MERRILL T. *The Scholastic Achievement of Athletes at Indiana University.* Bulletin of the School of Education, Indiana University, Vol. XVII, No. 2. Bloomington, Indiana: Bureau of Co-operative Research, Indiana University, 1941. Pp. 16. \$.50.

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